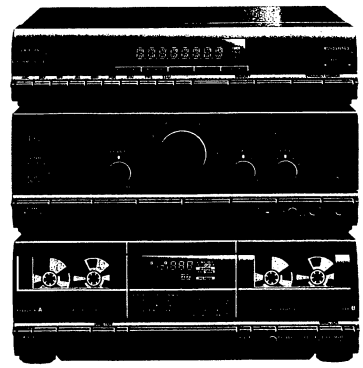
Digital Receiver 70FR330

Service
Service
Service

00G/01G/02G/05G/08G/10G
00U/01U/02U/05U/08U/10U



Service Manual

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*Pour votre sécurité, ces documents soivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne".

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Specification

General:

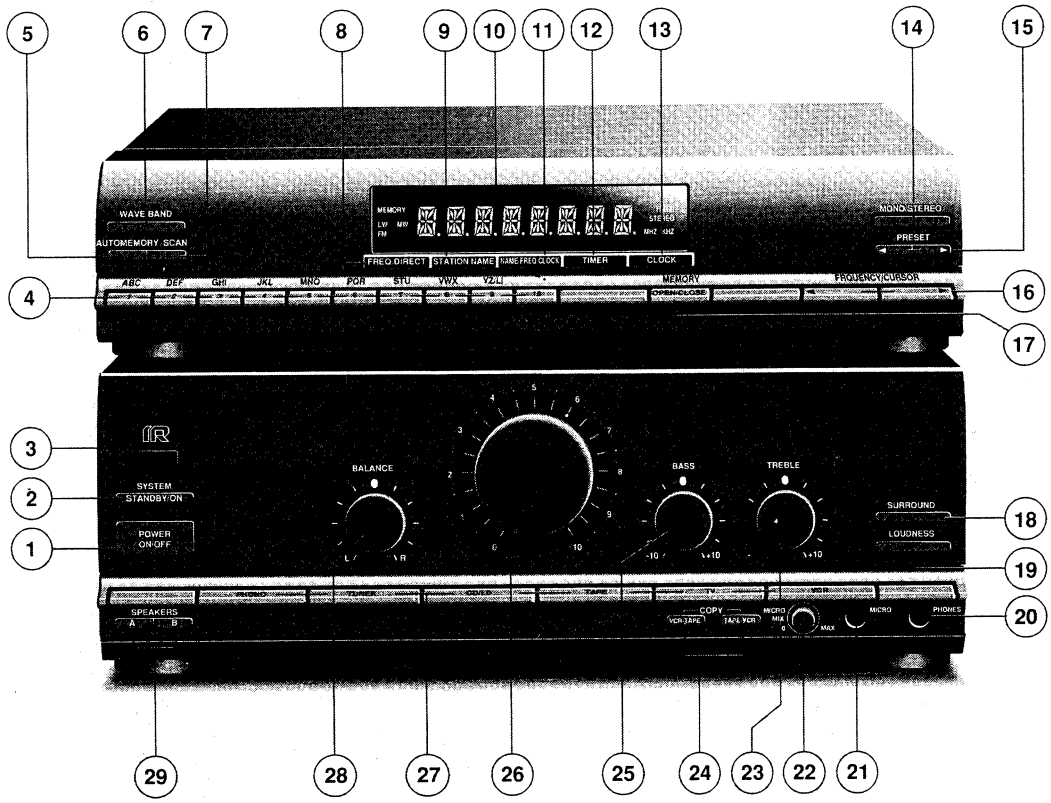
Mains voltage	:	220V / 50Hz for /00, /02, /08
	:	240V / 50Hz for /05, /10
	:	230V / 50Hz for /01
	:	120V / 60Hz for /17
Battery	:	3xR6 (only for clock)
Power consumption	:	≤ 24W in stand by
	:	≈ 30W in zero load
	:	≈ 300W operating
	:	≤ 370W in maximum power
Supply out (for FC320)	:	+14V stab.
	:	+12V unstab.
	:	4,1V AC on -20V for FTD
	:	-25V for FTD

Tuner:	FM	MW	LW
Tuning range	87,5 - 108 MHz	522 - 1611 kHz (not for /17) 530 - 1700 kHz (only for /17)	148 - 284 kHz
Aerial input	75 Ω (not for /17) 300 Ω (only for /17)	Frame aerial (pos 430)	Frame aerial (pos 430)
IF	10,7 MHz ± 25 kHz	450 kHz ± 1 kHz	450 kHz ± 1 kHz
Sensitivity	4 µV (2 µV typ.)	3 mV/m (2 mV/m typ.)	6 mV/m (not guaranteed above 250 kHz)
Image rejection ratio	30 dB (40 dB typ.)	27 dB (30 dB typ.)	40 dB (43 dB typ.)
-3 dB limiting point	5 µV (2 µV typ.)		

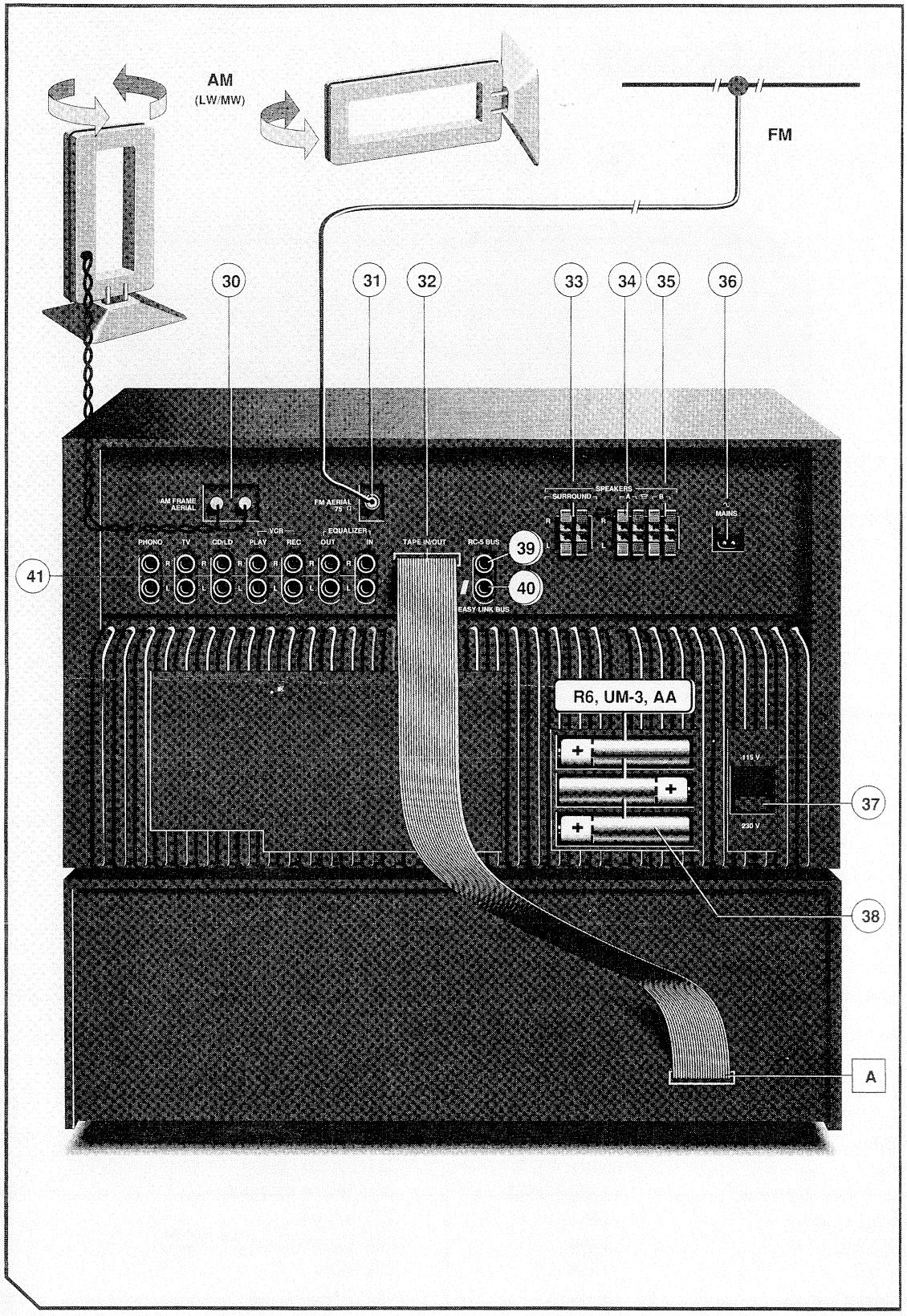
Amplifier:

Output power	:	2 x 60W at 8Ω D=0,7% (from 63 Hz to 12,5 kHz)
	:	2 x 55W at 8Ω D=0,09% (measured at 1 kHz)
Headphone	:	6,3mm stereo jack
Power stage protection	:	AC no
	:	DC yes
	:	Temperature no
	:	Shortcircuit yes
Frequency response	:	20 Hz - 20 kHz ± 2 dB
Tone control	:	Bass from +10 dB to -10 dB ± 2 dB at 80 Hz
	:	Treble from +10 dB to -10 dB ± 2 dB at 10 kHz
Loudness	:	+8 dB at 125 Hz
	:	+5 dB at 6,3 kHz ± 1 dB
Input sensitivity	:	CD 350 mV
	:	TV 200 mV
	:	PHONO 2,5 mV
	:	TAPE 580 mV
	:	Equal. 250 mV
	:	VCR 250 mV
Output voltage	:	TAPE 250 mV
	:	Equal. 250 mV
	:	Rec out 250 mV
	:	VCR 250 mV

Connections & Controls



1) Power ON/OFF 1271
2) Stand by 1463
3) IR-eye 6441
4) Tuner Preset Buttons 1472 - 1481
5) Auto Memory 1462
6) Wave band 1464
7) Auto scan 1466
8) Frequency direct 1482
9) Station name 1484
10) FTD 1451
11) Name/Frequency/Clock 1470
12) Timer 1483
13) Clock 1485
14) Mono/Stereo 1469
15) Preset UP/DOWN 1468/1471
16) Frequ. UP/DOWN 1461/1465
17) Memory OPEN/CLOSE 1467
18) Surround 1501
19) Loudness 1502
20) Headphones 1400
21) Micro socket 1880
22) Micro mix pot 3883
23) Treble 3512
24) Copy (Tape ↔ VCR) 1410/1411
25) Bass 3511
26) Volume pot 3526
Indicator LED 6001
27) Source selector PHONO 1419
TUNER 1415
CD 1416
TAPE 1417
TV 1418
VCR 1414
28) Balance pot 3525
29) Speakers A/B 1412/1413



30) AM frame aerial 1102
31) FM aerial 75Ω 1101
32) Tape IN/OUT 1554
33) Sourround 1282
34) Speaker terminal 1272
36) Mains socket 1273
37) Voltage selector (not in all versions)
39) RC5 1561
40) Easy link 1561

41) Source sockets
PHONO 1551
TV 1551
CD/LD 1552
VCR Play 1552
VCR Rec 1553
EQUALIZER IN/OUT 1553
A) Connection to FC330

DISMANTLING OF POWER BOARD

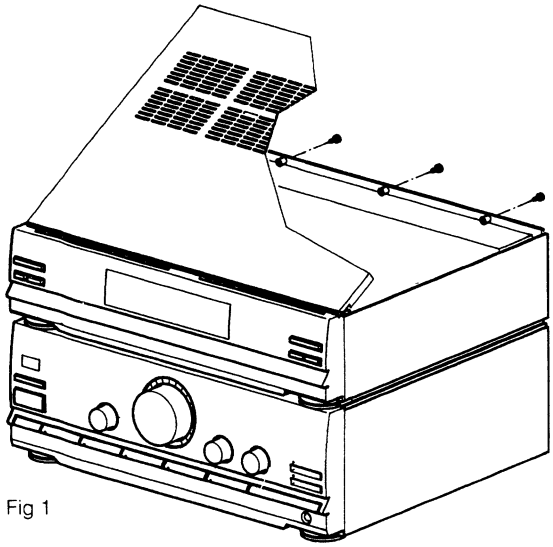


Fig 1

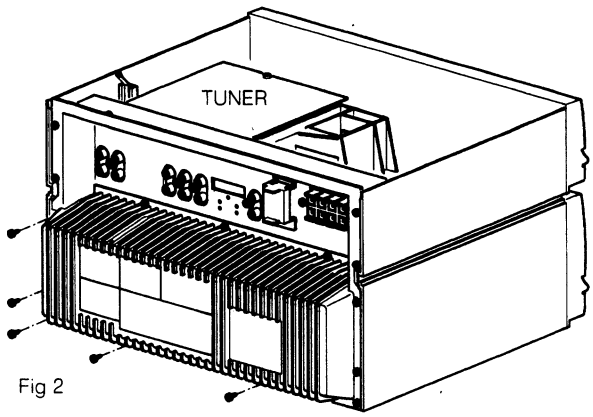


Fig 2

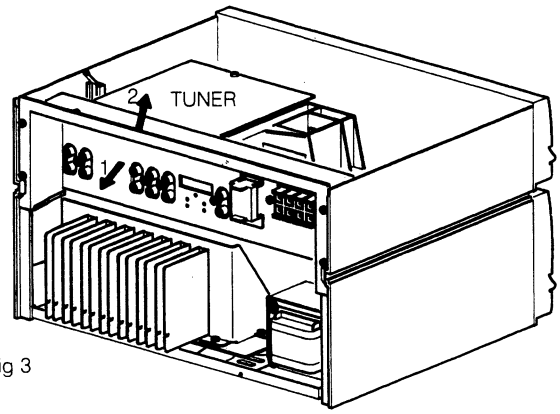


Fig 3

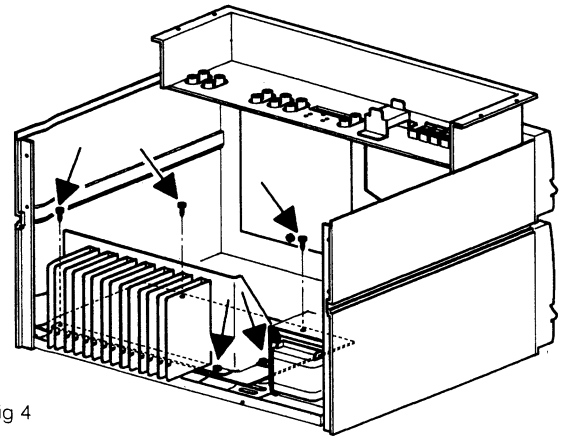


Fig 4

1) Loosen 3x Torx 10 screws (see figure 1).
2) Remove top (see figure 1).
3) Loosen 9x Torx 10 screws and 6x Torx M4x10 on rear part (see figure 2).
4) Remove Power lever (pos 417). Only snapped on power switch.
5) Bring the upper rear part in an upright position (see figure 3).
6) Loosen 5 screws (3x Torx M4x10, 2x Torx 10).

EVA.01205
T28/047

DISMANTLING OF TUNER PANEL

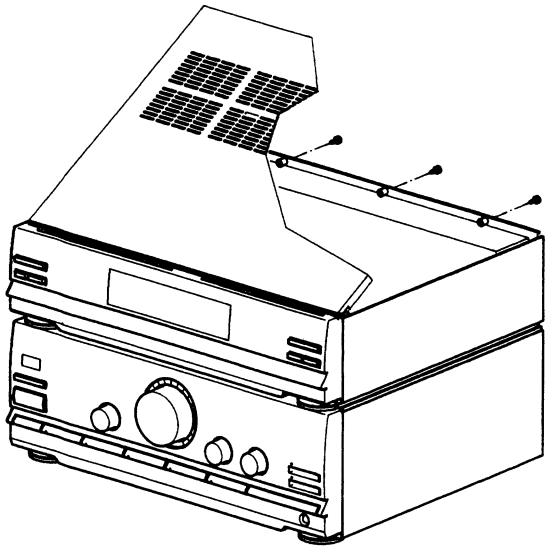


Fig.1

1) Loosen 3x Torx 10 screws (see figure 1).
2) Remove top (see figure 1).
3) Loosen 4x Torx 10 screws on aerial terminals (see figure 2).
4) Loosen 1x Torx 10 on printed circuit board (see figure 3).
5) Bend the hidden snaps (shown in fig. 2) with a small screw driver sidewards while pulling the PCB as shown in figure 3.

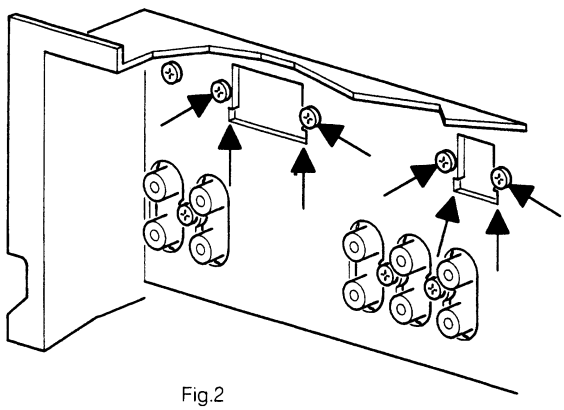


Fig.2

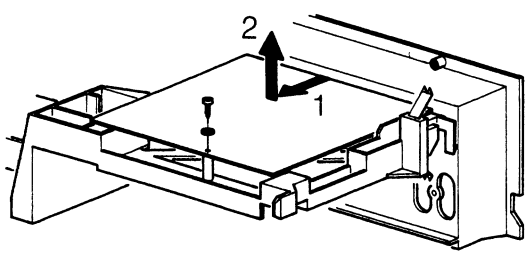


Fig.3

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T05–045

DISMANTLING OF OUTPUT PANEL

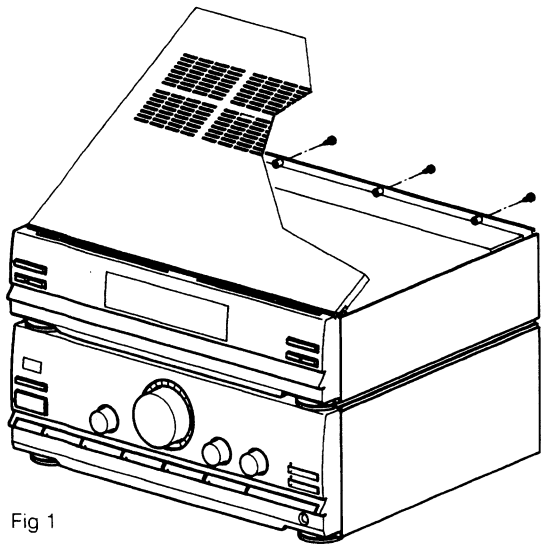


Fig 1

1) Loosen 3x Torx 10 screws (see figure 1).
2) Remove top (see figure 1).
3) Remove Power lever (pos 417). Only snapped on power switch.
4) Remove 3x Torx 10 (see figure 2).
5) Remove PCB as shown in figure 3.

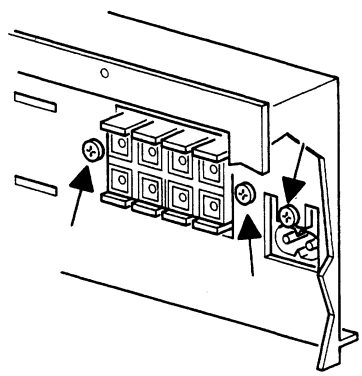


Fig 2

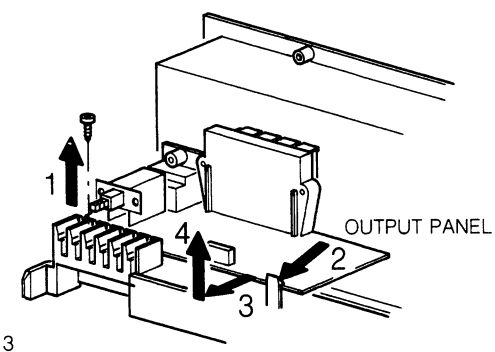


Fig 3

EVA.01206
T28/047

DISMANTLING OF SOURCE SELECTOR

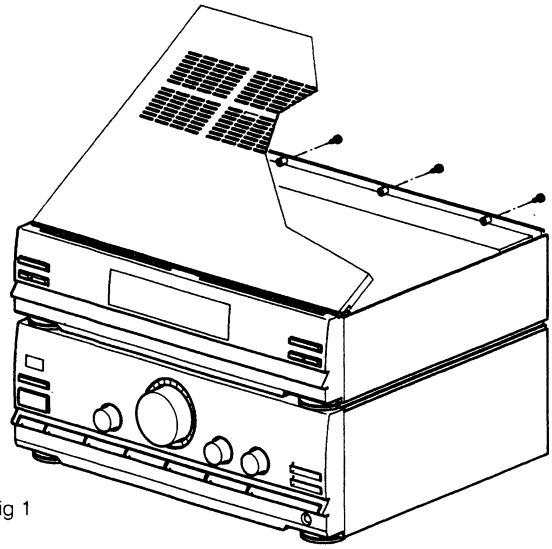


Fig 1

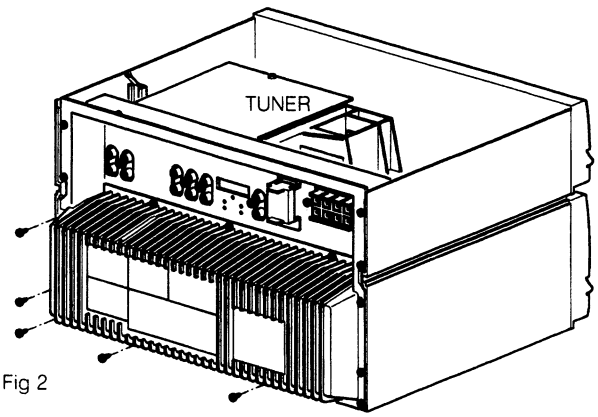


Fig 2

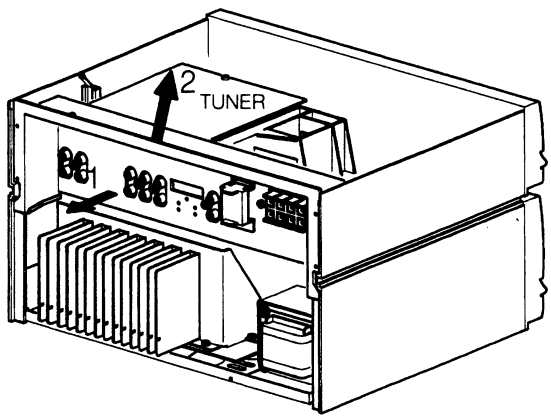


Fig 3

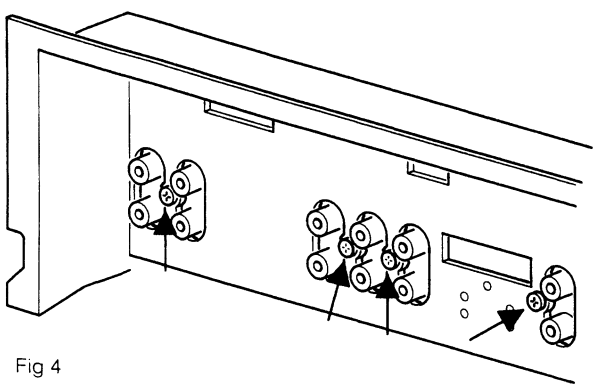


Fig 4

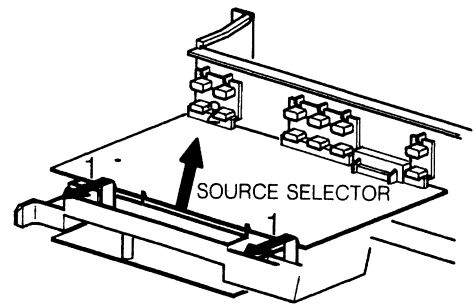


Fig 5

1) Loosen 3x Torx 10 screws (see figure 1).
2) Remove top (see figure 1).
3) Loosen 9x Torx 10 screws and 6x Torx M4x10 on rear part (see figure 2).
4) Remove Power lever (pos 417). Only snapped on power switch.
5) Bring the upper rear part in an upright position (see figure 3).
6) Loosen 5x Torx 10 screws (see figure 4). Remove equalizer bridges.
7) Loosen two snaps (see figure 5) and remove PCB.

ACCESS TO FRONT PANELS

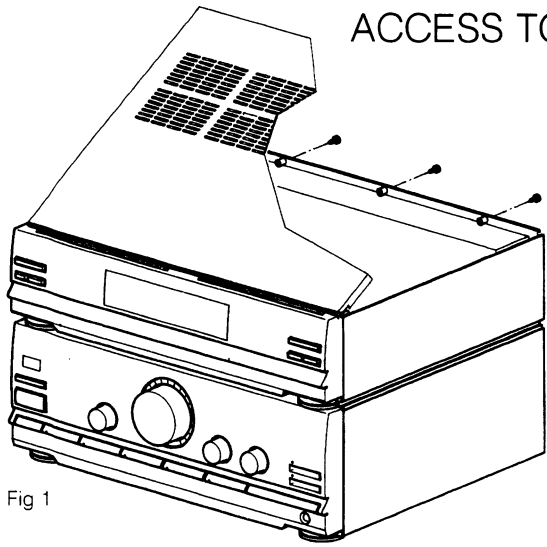


Fig 1

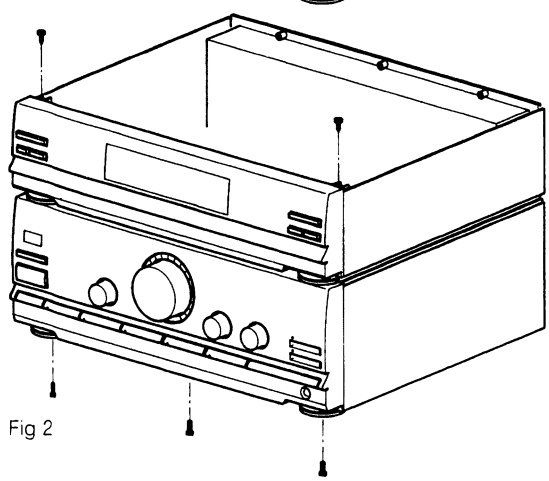


Fig 2

1) Loosen 3x Torx 10 screws (see figure 1).
2) Remove top (see figure 1).
3) Loosen 2x Torx 10 - front/side panels (see figure 2).
4) Loosen 3x Torx M4x10 on bottom (see figure 2).
5) Loosen two snaps on side panels (see figure 3).

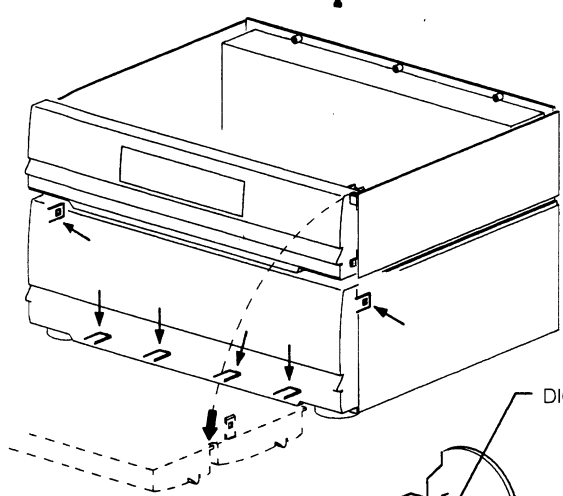
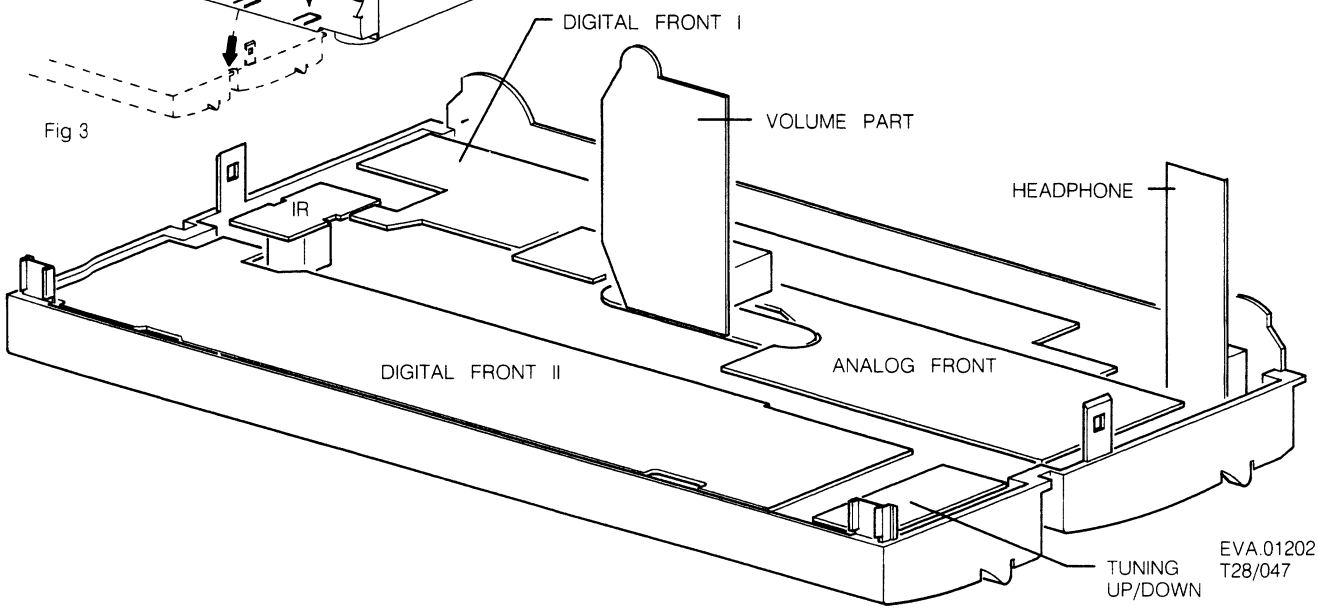
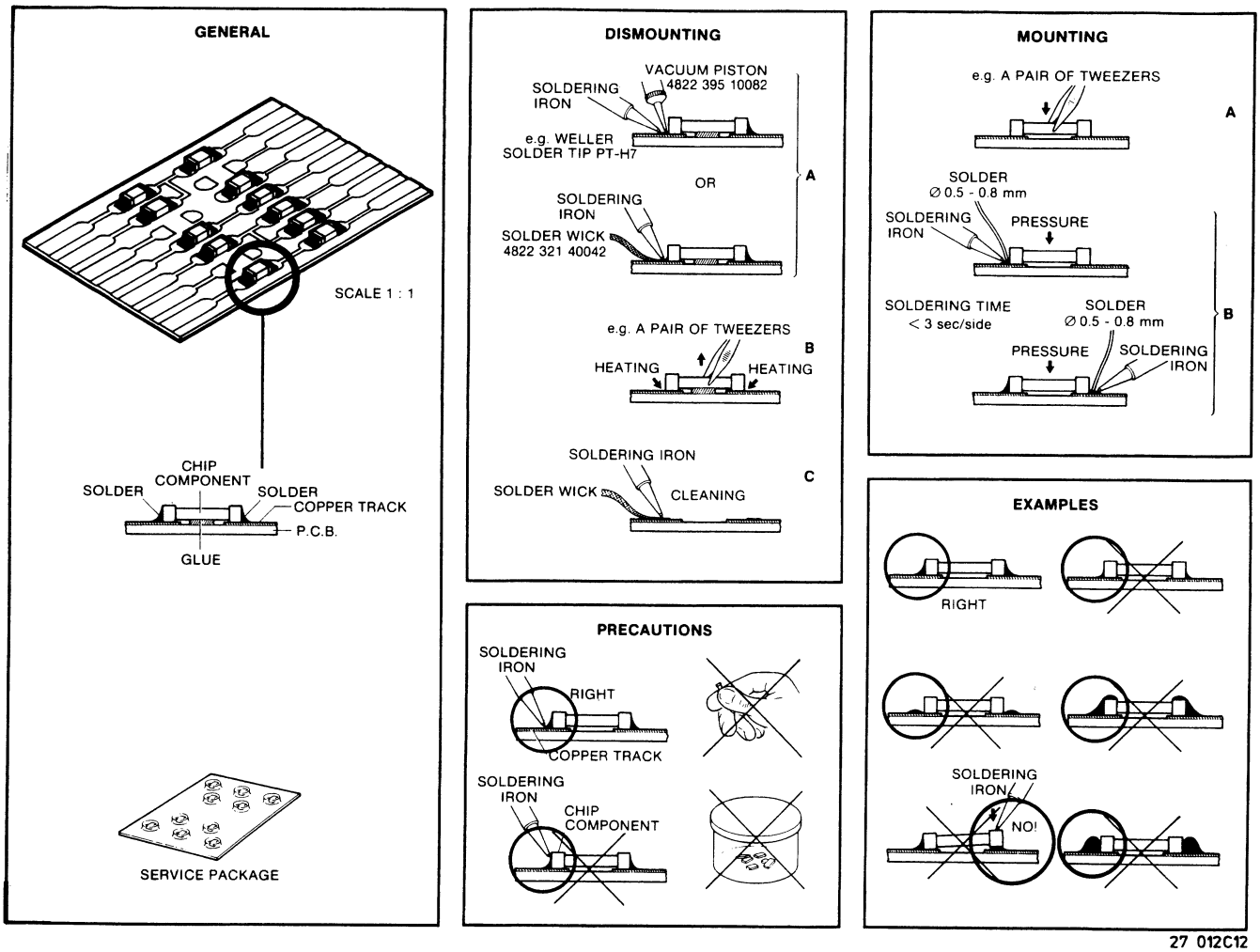


Fig 3





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GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD

NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

NL

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

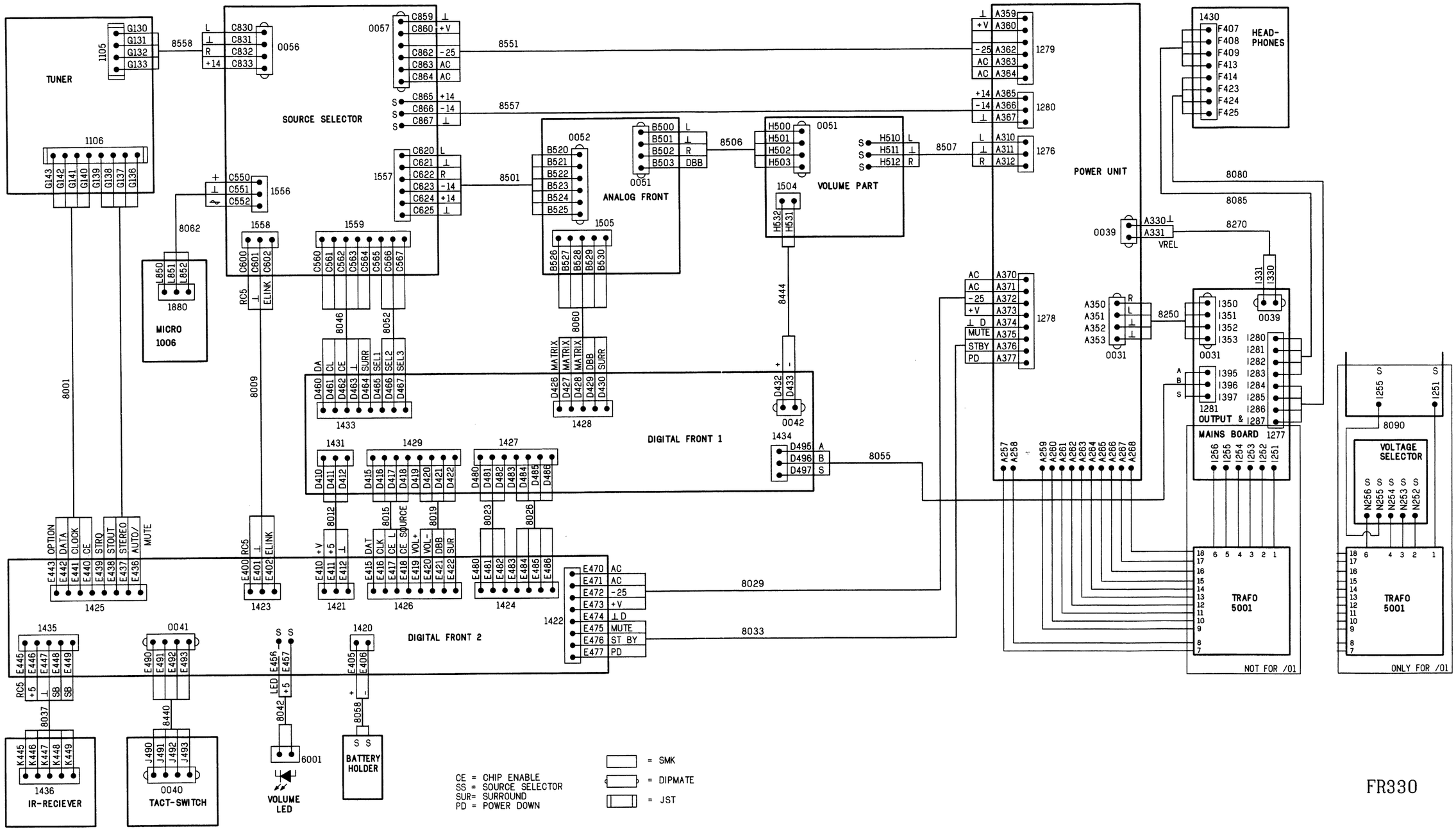
I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

WIRING DIAGRAM



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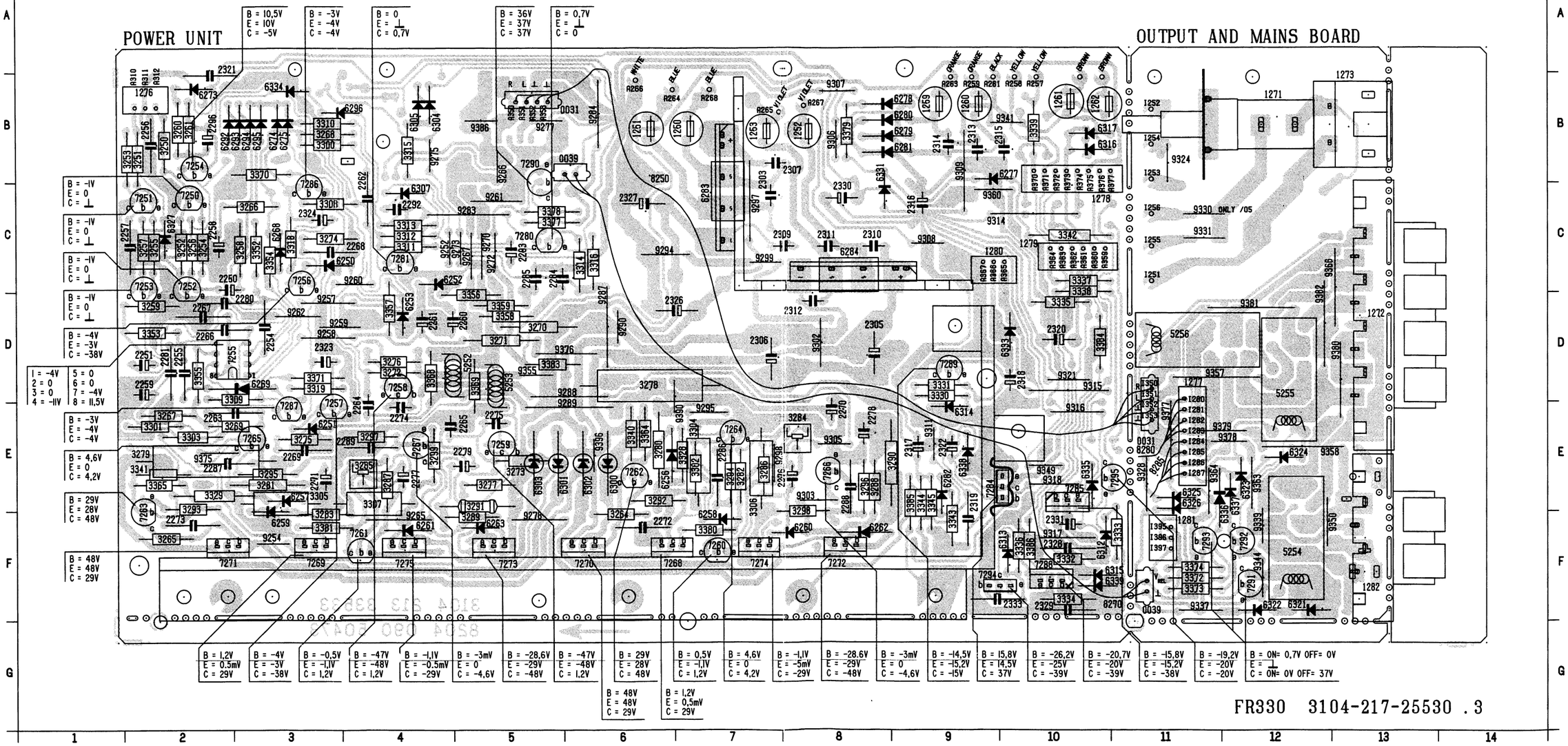
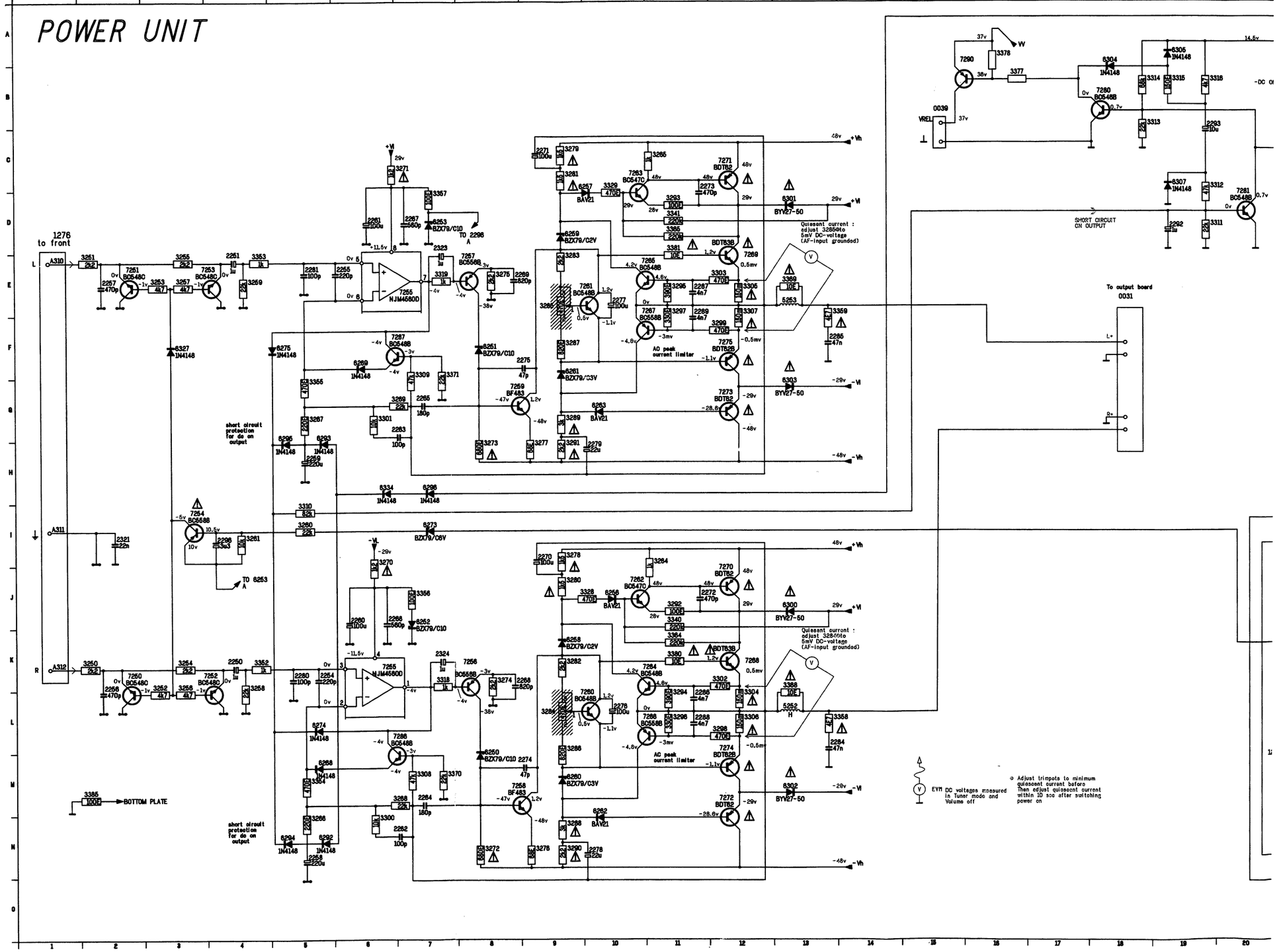
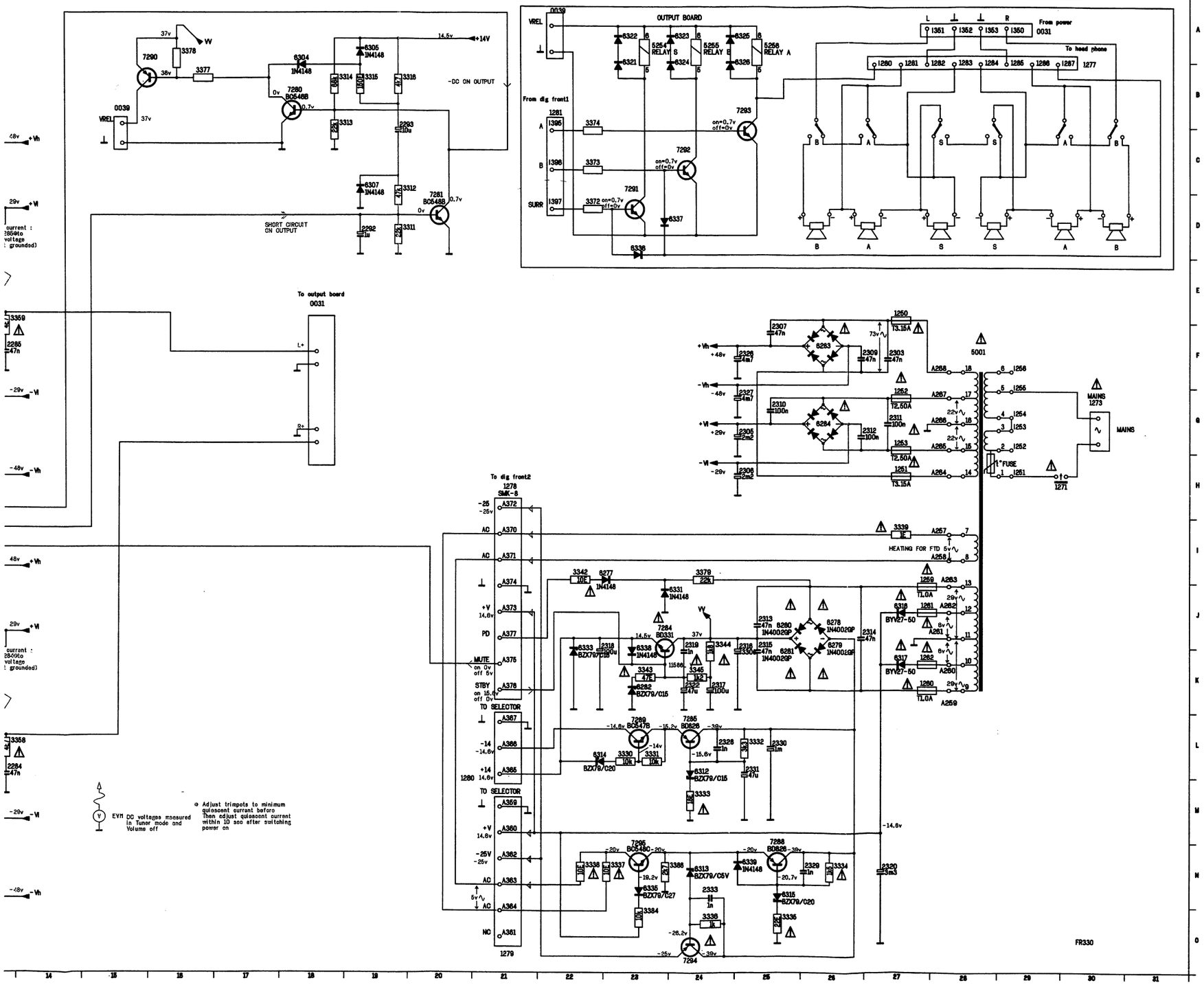

POWER UNIT
OUTPUT AND MAINS BOARD
B = 10,5V E = 10V C = -5V
B = -3V E = -4V C = -4V
B = 0 E = ⊥ C = 0,7V
B = 36V E = 37V C = 37V
B = 0,7V E = ⊥ C = 0
B = -1V E = 0 C = ⊥
B = -4V E = -3V C = -38V
I = -4V 2 = 0 3 = 0 4 = -11V 5 = 0 6 = 0 7 = -4V 8 = 11,5V
B = -3V E = -4V C = -4V
B = 4,6V E = 0 C = 4,2V
B = 29V E = 28V C = 48V
B = 48V E = 48V C = 29V
B = 1,2V E = 0,5mV C = 29V
B = -4V E = -3V C = -38V
B = -0,5V E = -1,1V C = 1,2V
B = -47V E = -48V C = 1,2V
B = -1,1V E = -0,5mV C = -29V
B = -3mV E = 0 C = -4,6V
B = -28,6V E = -29V C = -48V
B = -47V E = -48V C = 1,2V
B = 29V E = 28V C = 48V
B = 48V E = 48V C = 29V
B = 1,2V E = 0,5mV C = 29V
B = 0,5V E = -1,1V C = 1,2V
B = 4,6V E = 0 C = 4,2V
B = -1,1V E = -5mV C = -29V
B = -28,6V E = -29V C = -48V
B = -3mV E = 0 C = -4,6V
B = -14,5V E = -15,2V C = -15V
B = 15,8V E = 14,5V C = 37V
B = -26,2V E = -25V C = -39V
B = -20,7V E = -20V C = -39V
B = -15,8V E = -15,2V C = -38V
B = -19,2V E = -20V C = -20V
B = ON= 0,7V OFF= 0V E = ⊥ C = ON= 0V OFF= 37V
WHITE BLUE BLUE VIOLET VIOLET ORANGE ORANGE BLACK YELLOW YELLOW BROWN BROWN
9330 ONLY /05
FR330 3104-217-25530 .3

POWER UNIT


1276
to front
A310
A311
A312
BOTTOM PLATE
TO 2296 A
TO 6253 A
TO 6253 C
short circuit protection for dc on output
AC peak current limiter
SHORT CIRCUIT ON OUTPUT
Quiesant current : adjust 3284to 5mV DC-voltage (AF-input grounded)
To output board 0031
EVM DC voltages measured in Tuner mode and Volume off
Adjust trimpots to minimum quiescent current before Then adjust quiescent current within 10 sec after switching power on


37v
VV
7290
3378
38v
3377
6304
1N4148
6305
1N4148
14.6v
+14V
-DC ON OUTPUT
0v
7280
BC548B
0.7v
0039
VREL
37v
3314
3315
3316
3313
2293
10u
6307
1N4148
3312
7281
BC548B
0.7v
0v
SHORT CIRCUIT
ON OUTPUT
2292
1u
3311
OUTPUT BOARD
VREL
6322
6323
6325
5254
RELAY S
5255
RELAY B
5256
RELAY A
6321
6324
6326
From dig front1
1281
A
1396
3374
B
1398
3373
SURR
1397
3372
7293
7292
7291
on=0,7v
off=0v
6337
6336
L
R
From power
0031
1361
1352
1353
1350
To head phone
1280
1281
1282
1283
1284
1285
1286
1287
1277
B
A
S
S
A
B
48v
+Vh
29v
+Vi
-29v
-Vi
-48v
-Vh
current :
28549to
voltage
: grounded)
3369
2285
47n
To output board
0031
L+
R+
2307
47n
6283
73v
1250
T3.15A
2309
47n
2303
47n
2326
4m7
2327
4m7
2310
100n
6284
2312
100n
2311
100n
1252
T2.50A
1253
T2.50A
2306
2m2
2308
2m2
1251
T3.15A
5001
A268
A267
A266
A265
A264
18
17
16
15
14
6
5
4
3
2
1
1256
1255
1254
1253
1252
1251
22v
MAINS
1273
MAINS
1*FUSE
1271
To dig front2
1278
SMK-8
-25
-25v
AC
AC
+V
14.6v
PD
MUTE
on 0v
off 6v
STBY
on 15.6v
off 0v
TO SELECTOR
-14
-14.6v
+14
14.6v
TO SELECTOR
+V
14.6v
-25V
-25v
AC
5v
AC
NC
1279
A372
A370
A371
A374
A373
A377
A375
A376
A367
A366
A365
A369
A360
A362
A363
A364
A361
1280
3339
1E
A257
A258
HEATING FOR FTD 5v
1259
T1.0A
A263
A262
A261
A260
A259
6318
BYV27-50
6317
BYV27-50
1261
1262
1260
6v
29v
3342
10E
6277
1N4148
3379
22k
6331
1N4148
7284
BD331
14.5v
37v
6333
BZX79/C18
2318
100u
6338
1N4148
2319
1n
3344
1k
11586
3343
47E
3345
1k2
6282
BZX79/C15
2322
47u
2317
100u
2313
47n
6280
1N4002GP
6278
1N4002GP
2315
47n
6281
1N4002GP
6279
1N4002GP
2314
47n
2316
330n
7289
BC547B
-14.6v
7285
BD826
-15.2v
-39v
-14v
-15.6v
6314
BZX79/C20
3330
10k
3331
10k
2328
1n
3332
3k3
2330
1m
6312
BZX79/C15
2331
47u
3333
2k2
-14.6v
7296
BC548B
-20v
7288
BD826
-39v
3338
10k
3337
10k
-19.2v
3386
2k2
6313
BZX79/C5V
-20.7v
2329
1n
3334
1k
6335
BZX79/C27
3384
10k
2333
1n
3336
1k
-26.2v
-25v
-39v
7294
6339
1N4148
6315
BZX79/C20
3335
2k2
2320
3m3
EVM DC voltages measured in Tuner mode and Volume off
Adjust trimpots to minimum quiescent current before. Then adjust quiescent current within 10 sec after switching power on
FR330
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O

TUNER Adjustment table

Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT						
FM 87,5 - 108 MHz			108 MHz	5104		8V ± 50 mV
			87,5 MHz	check		2,7V ± 400 mV
AM (2-band version) 530 - 1700 kHz [1]			1700 kHz	2136		7,6V ± 100 mV
			530 kHz	check	◇1	1V ± 200 mV
LW 148 - 284 kHz			284 kHz	5105		8,4V ± 200 mV
MW (3-band version) 522 - 1611 kHz [2]			1611 kHz	2136		8,5V ± 100 mV
FM - RF [3]						
FM	87,5 MHz mod = 1 kHz Δf = 22,5 kHz	◇A	87,5 MHz	5103	◇2	max.
				5101 [4] 5102 [4]		
	108 MHz mod = 1 kHz Δf = 22,5 kHz		108 MHz	2111		
				2102 [4] 2109 [4]		
FM - IF						
FM	108 MHz Δf = 500 kHz as low as possible		108 MHz	5111		symmetrical and max. height
STEREO DECODER						
FM	98 MHz carrier 1 mV	◇A	98 MHz	3145	◇3	19 kHz ± 50 Hz
SEARCH SENSITIVITY						
FM	98 MHz carrier 12 µV	◇A	98 MHz	3114	◇4	adjust so that voltage switches from low to high
FM	98 MHz carrier 15 µV	◇A	99 MHz or 97 MHz	check		press DOWN or UP and check that set stops at 98 MHz
FM Autostore [5]	98 MHz carrier 350 µV	◇A	99 MHz or 97 MHz	check		press DOWN or UP and check that set stops at 98 MHz
AM - IF						
MW	522 kHz [6] Δf = 10 kHz as low as possible	◇B via 100nF	522 kHz	5108	◇2	symmetrical and max. height
AM - RF						
MW mod = 1 kHz 30% AM	558 kHz	◇C	558 kHz	5110	◇2	max.
	1494 kHz		1494 kHz	2151		
LW mod =1 kHz 30% AM	155 kHz		155 kHz	5116		max.
	270 kHz		270 kHz	2205		


```
1101  B 1 2161   C 5 3121   D 3 5112   C 6 9145   E 3
1102  D 1 2162   C 4 3122   C 5 5113   C 4 9147   D 4
1105  E 5 2163   D 5 3124   B 4 5114   C 6
1106  E 6 2164   D 5 3125   D 5 5115   E 4
2100  B 2 2165   C 5 3126   E 4 5116   E 3
2101  B 2 2166   C 5 3127   E 4 5118   D 3
2102  C 3 2167   D 6 3128   D 3 6101   C 3
2103  C 2 2168   D 5 3129   D 3 6102   B 3
2104  C 3 2169   D 5 3130   C 5 6103   B 4
2105  C 3 2170   D 6 3131   C 6 6104   E 3
2106  B 3 2171   B 6 3132   B 5 6105   E 2
2107  B 3 2172   D 5 3133   C 6 6106   C 4
2108  D 2 2173   D 6 3134   A 4 6107   C 5
2109  A 3 2174   E 5 3135   C 7 6109   D 6
2110  B 4 2175   E 5 3136   B 7 6110   B 4
2111  B 3 2176   E 5 3137   D 3 6111   B 4
2112  B 3 2177   E 5 3138   B 7 7101   C 3
2113  B 3 2178   A 4 3139   B 6 7102   C 3
2114  B 3 2179   E 5 3140   D 5 7103   C 4
2115  B 4 2180   C 6 3141   E 6 7104   B 5
2116  B 4 2181   C 6 3142   E 6 7105   C 6
2117  B 4 2182   B 6 3143   D 6 7106   D 5
2118  C 4 2183   C 6 3144   D 5 7107   E 3
2119  C 4 2184   C 3 3145   E 5 7108   E 4
2120  C 4 2185   C 6 3146   E 3 7109   E 4
2121  C 3 2186   B 5 3147   B 6 7110   B 6
2122  C 3 2187   B 5 3148   D 6 7111   C 6
2123  C 3 2188   B 2 3149   D 6 7112   D 3
2124  D 6 2189   B 2 3150   D 6 7113   B 6
2125  B 4 2191   C 3 3151   D 6 7114   B 6
2126  B 4 2192   C 4 3153   E 6 7115   B 6
2127  B 4 2193   C 4 3155   C 5 7116   E 4
2128  C 5 2195   C 7 3156   B 6 7117   E 3
2129  C 4 2196   A 2 3157   C 5 7118   E 4
2130  D 4 2197   B 3 3158   B 5 7119   E 4
2131  D 3 2198   B 3 3160   B 5 9101   C 3
2132  C 4 2199   D 5 3161   A 3 9102   B 2
2133  D 3 2200   B 6 3162   C 5 9106   D 3
2134  D 3 2201   E 3 3163   B 3 9107   D 4
2135  D 3 2204   D 2 3164   C 2 9108   D 4
2136  D 2 2205   E 4 3165   B 5 9109   D 4
2137  C 4 2208   B 4 3170   A 3 9110   D 4
2138  B 4 2209   A 4 3171   D 4 9111   B 4
2139  B 6 2210   E 5 3172   E 4 9112   B 4
2140  B 5 2211   B 3 3173   B 3 9113   E 4
2141  B 6 3101   B 3 3174   E 2 9114   E 4
2142  B 6 3102   C 3 3175   E 2 9115   E 4
2143  B 6 3103   C 2 3176   D 3 9116   B 5
2144  D 3 3104   C 3 3177   D 3 9117   B 5
2145  B 4 3105   C 3 3178   E 4 9118   C 5
2146  B 4 3106   B 3 3179   D 4 9119   C 5
2147  D 4 3107   B 3 5101   C 2 9121   A 5
2148  D 5 3108   C 3 5102   A 2 9122   B 6
2149  C 4 3109   B 3 5103   B 3 9123   E 5
2150  D 3 3110   B 3 5104   B 3 9124   D 5
2151  E 2 3111   B 4 5104   C 4 9125   C 6
2152  E 3 3112   B 3 5105   D 2 9126   D 6
2153  D 3 3113   B 5 5106   B 5 9127   B 6
2154  B 2 3114   C 3 5107   C 4 9128   D 6
2155  A 6 3115   C 3 5107   B 5 9129   D 6
2156  B 6 3116   D 3 5107   C 5 9130   E 6
2157  B 6 3117   C 6 5108   C 5 9132   E 5
2158  C 6 3118   C 4 5109   C 5 9139   E 3
2159  B 7 3119   C 4 5110   E 2 9140   E 2
2160  C 7 3120   C 6 5111   B 5 9141   E 2
3104-217-25450 2  DATE  91-01-09  CAD
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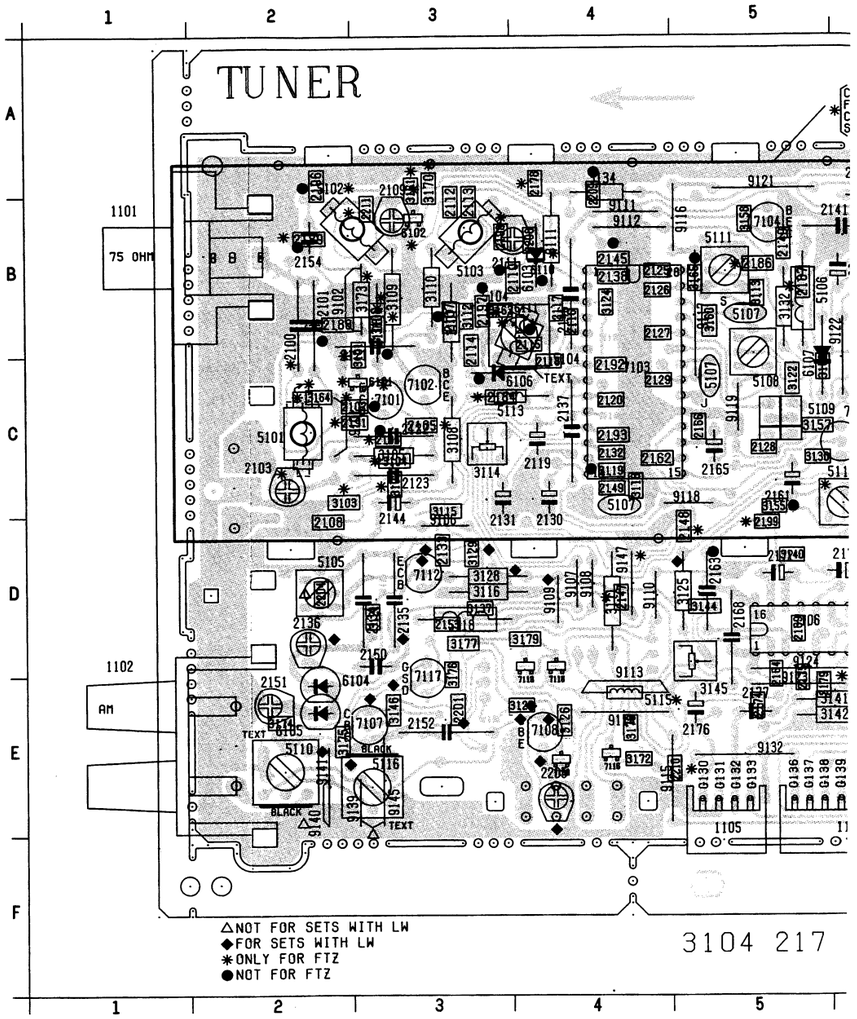
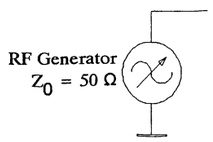
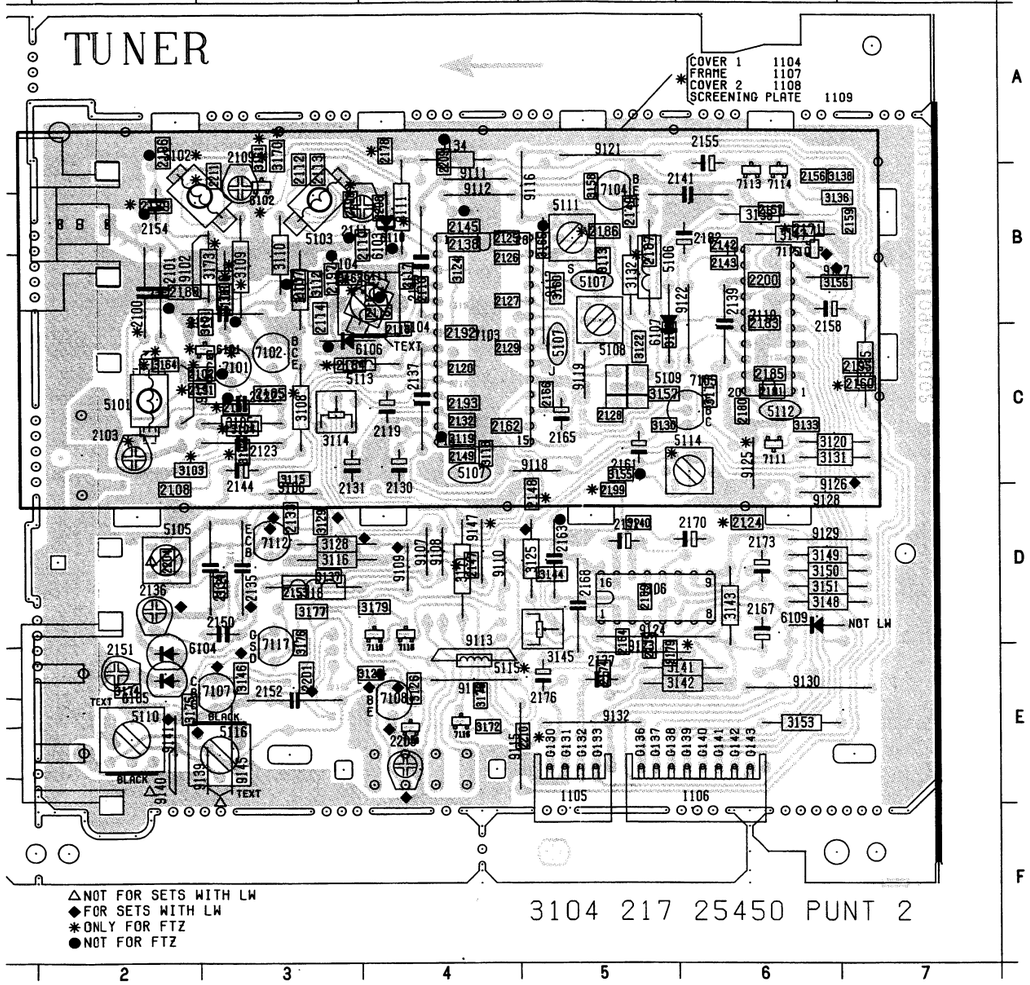


↕ Repeat

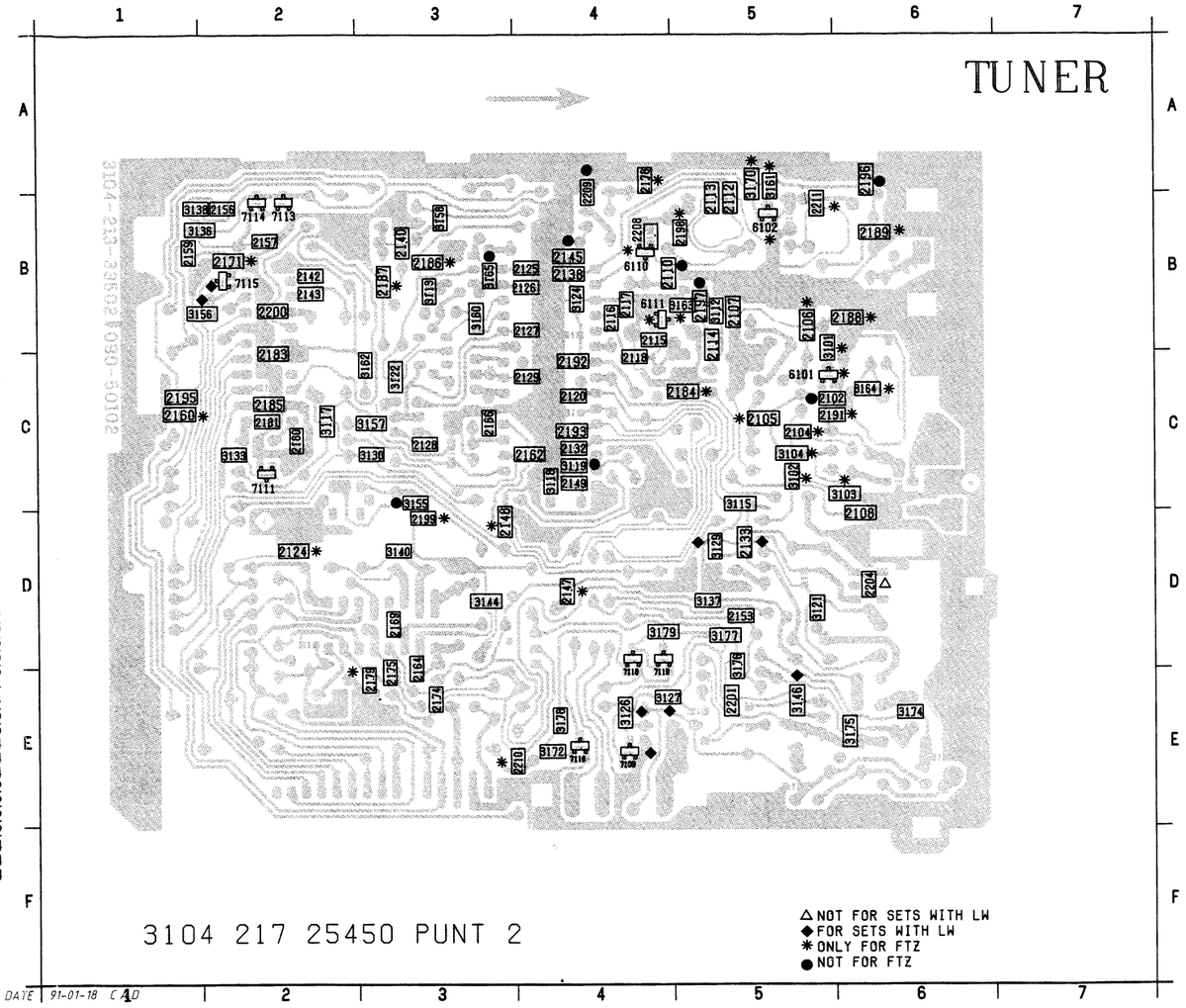
1) used in AUSTRALIA, CANADA and USA versions.
2) used in European versions.
3) For all sets except /02 adjust coil 5101 for nominal position (top of core approx. 3mm from topedge coil).
4) only for FTZ versions
5) Connect G136 to GND to switch set into Autostore sensitivity
6) via low impedance (5Ω) direct to pin 10 of 7103 (see fig. 1).





2102	C 5	2208	B 4
2104	C 5	2209	A 4
2105	C 5	2210	E 3
2106	B 5	2211	B 5
2107	B 5	3101	B 5
2108	D 6	3102	C 5
2110	B 4	3103	C 6
2112	B 5	3104	C 5
2113	B 5	3112	B 5
2114	B 5	3113	B 3
2115	B 4	3115	C 5
2116	B 4	3117	C 2
2117	B 4	3118	C 4
2118	C 4	3119	C 4
2120	C 4	3121	D 5
2124	D 2	3122	C 3
2125	B 4	3124	B 4
2126	B 4	3126	E 4
2127	B 4	3127	E 4
2128	C 3	3129	D 5
2129	C 4	3130	C 3
2132	C 4	3133	C 2
2133	D 5	3136	B 2
2138	B 4	3137	D 5
2140	B 3	3138	B 1
2142	B 2	3140	D 3
2143	B 2	3144	D 3
2145	B 4	3146	E 5
2147	D 4	3155	C 3
2148	D 3	3156	B 2
2149	C 4	3157	C 3
2153	D 5	3158	B 3
2156	B 2	3160	B 3
2157	B 2	3161	A 5
2159	B 1	3162	C 3
2160	C 1	3163	B 5
2162	C 4	3164	C 6
2164	D 3	3165	B 3
2166	C 3	3170	A 5
2169	D 3	3172	E 4
2171	B 2	3174	E 6
2174	E 3	3175	E 6
2175	E 3	3176	D 5
2178	A 4	3177	D 5
2179	E 3	3178	E 4
2180	C 2	3179	D 4
2181	C 2	6101	C 5
2183	C 2	6102	B 5
2184	C 5	6110	B 4
2185	C 2	6111	B 4
2186	B 3	7109	E 4
2187	B 3	7111	C 2
2188	B 6	7113	B 2
2189	B 6	7114	B 2
2191	C 5	7115	B 2
2192	C 4	7116	E 4
2193	C 4	7118	E 4
2195	C 1	7119	E 4
2196	A 6		
2197	B 5		
2198	B 5		
2199	D 3		
2200	B 2		
2201	E 5		
2204	D 6		

3104-217-25450 2 DATE 91-01-18 CAD

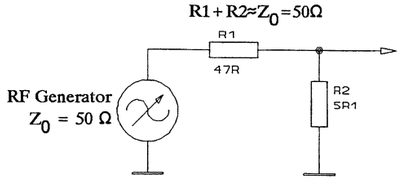


n (top of core approx. 3mm from topedge coil).

vity

).

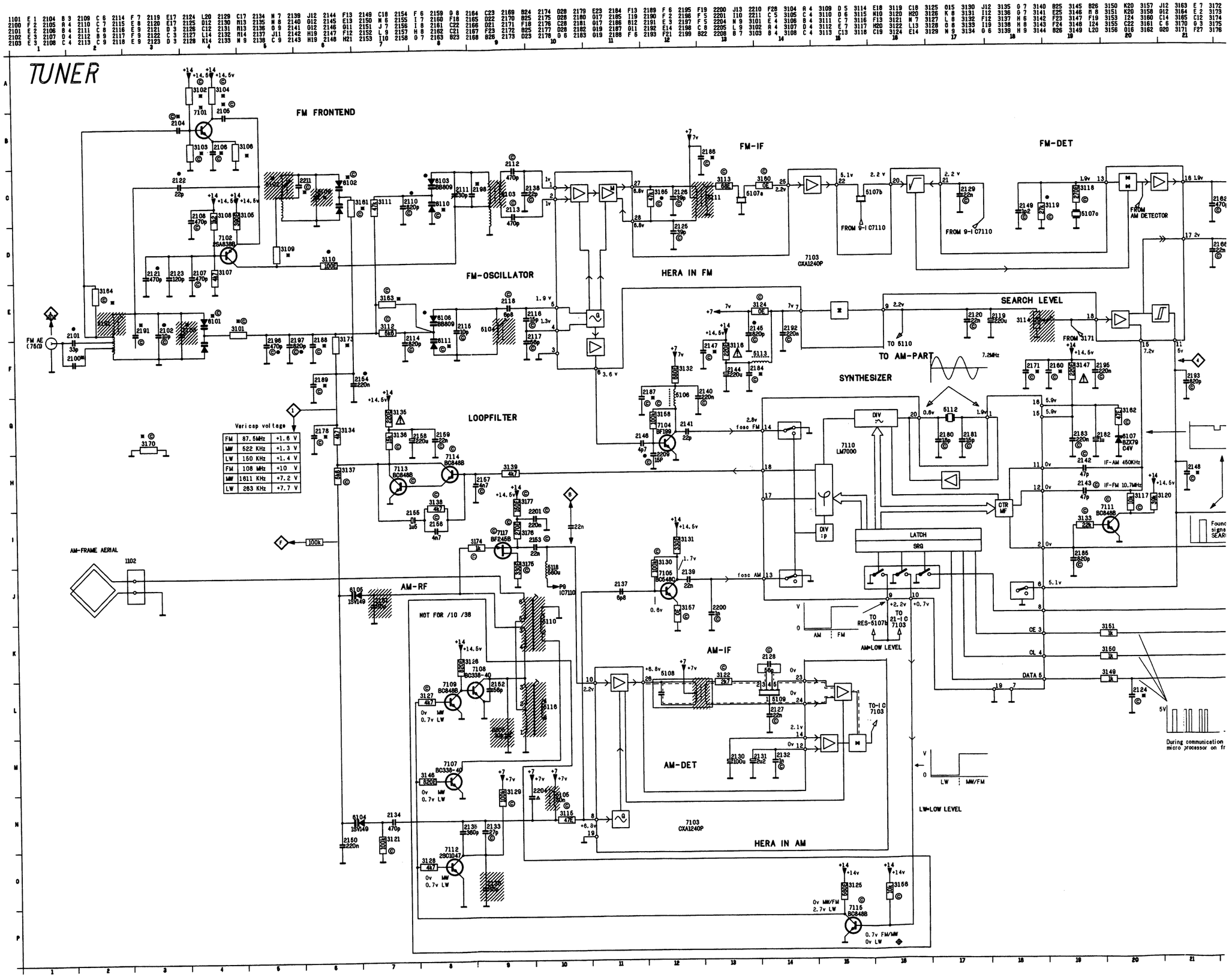
Protection for
RF Generator
$R1 + R2 \approx Z_0 = 50\Omega$

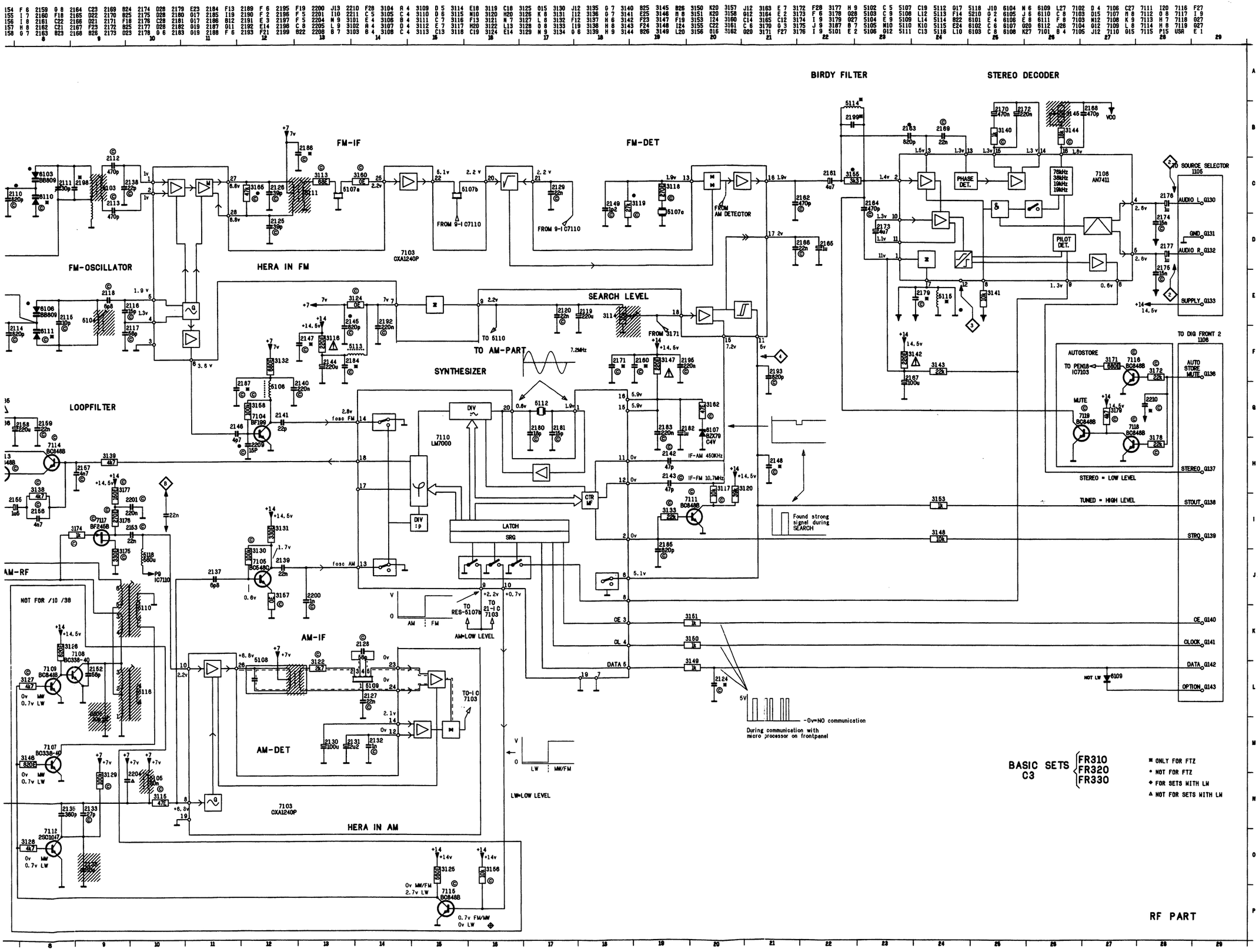


$$Z = \frac{R2 * (Z_0 + R1)}{R2 + (Z_0 + R1)} \approx 5\Omega$$

Fig. 1

TUNER


FM FRONTEND
FM-IF
FM-DET
FM-OSCILLATOR
HERA IN FM
SEARCH LEVEL
TO AM-PART
SYNTHESIZER
LOOPFILTER
FM AE (75Ω)
FROM 9-I C7110
FROM AM DETECTOR
7103 CXA1240P
7110 LM7000
LATCH
SRG
CTR MF
DIV :p
IF-AM 450KHz
IF-FM 10.7MHz
AM-FRAME AERIAL
AM-RF
NOT FOR /10 /38
AM-IF
AM-DET
HERA IN AM
TO RES-5107b
TO 21-I C 7103
AM-LOW LEVEL
LW-LOW LEVEL
TO I C 7103
During communication micro processor on fr
Varicap voltage
FM 87.5MHz +1.6 V
MW 522 KHz +1.3 V
LW 150 KHz +1.4 V
FM 108 MHz +10 V
MW 1611 KHz +7.2 V
LW 263 KHz +7.7 V


RF PART
BIRDY FILTER
STEREO DECODER
FM-IF
FM-DET
FM-OSCILLATOR
HERA IN FM
SEARCH LEVEL
TO AM-PART
SYNTHESIZER
LOOPFILTER
AM-RF
AM-IF
AM-DET
HERA IN AM
NOT FOR /10 /38
7103 CXA1240P
7110 LM7000
7106 AN7411
TO SOURCE SELECTOR 1106
TO DIG FRONT 2 1106
AUDIO L G130
GND G131
AUDIO R G132
SUPPLY G133
AUTO STORE MUTE G136
STEREO G137
STOUT G138
STRQ G139
CE G140
CLOCK G141
DATA G142
OPTION G143
STEREO = LOW LEVEL
TUNED = HIGH LEVEL
AUTOSTORE
MUTE
PHASE DET.
PILOT DET.
76kHz 38kHz 19kHz
VCO
FROM AM DETECTOR
TO AM-PART
TO 5110
FROM 9-I C7110
TO RES-5107h
TO 21-I C 7103
AM-LOW LEVEL
LW-LOW LEVEL
Found strong signal during SEARCH
During communication with micro processor on frontpanel
-0v=NO communication
BASIC SETS C3
FR310
FR320
FR330
* ONLY FOR FTZ
• NOT FOR FTZ
◆ FOR SETS WITH LW
△ NOT FOR SETS WITH LW

DIGITAL FRONT 2

TO DIG FRONT 1

FROM POWER

STAND BY

OFF 5v
ON 0v

MUTE

POWER DOWN

AC

TO VOL LED

VOL LED

TO SOURCE SELECT

EASY LINK

IR RECIEVER

PART K

7471 TMP47C870

TIMER OSC

OSC

INPUT PORT

I/O PORT R3

OUTP PORT P0

I/O PORT P7

OUTP PORT P1

I/O PORT R9

I/O PORT R6

OUTP. PORT P2

I/O PORT R6

INP. PORT R8

CPU

VFT DRIVER CONTROL

7461 POF74HCT1

7461 ST24C02 MEMORY CMOS SERIAL EPROM

TO TACT SWITCH PANEL 0040

TO DIGITAL FRONT 1 1424

TO TUNER 1425

TO DIG FRONT 1 1426

TACT SWITCH

FROM POWER UNIT 1413

TO DIGITAL FRONT 2 1427

TO ANALOG FRONT 1428

TO DIG FRONT 2 1429

DIGIT

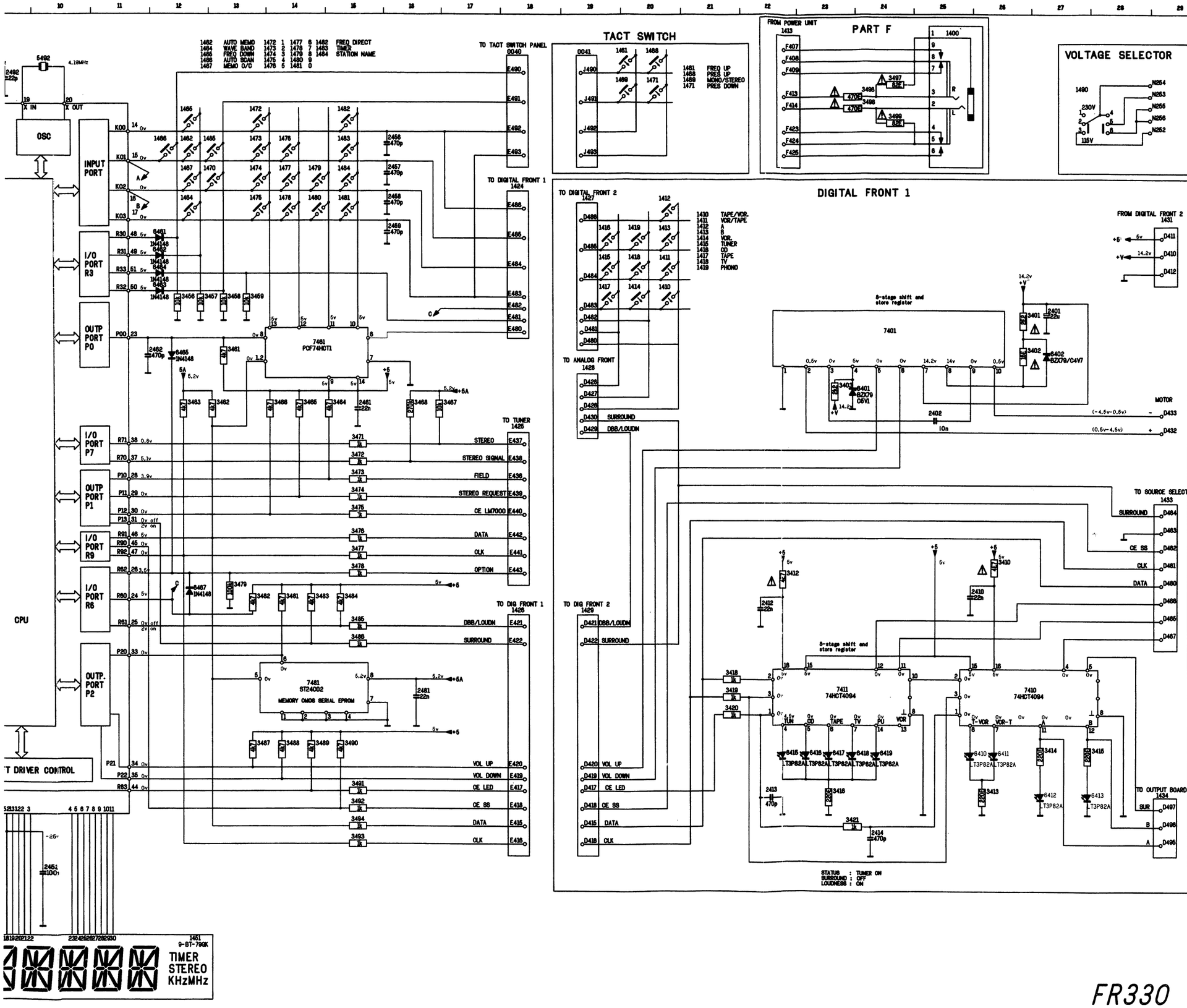
1462 AUTO MEMO
1464 WAVE BAND
1465 FREQ DOWN
1466 AUTO SCAN
1467 MEMO O/C
1472 1
1473 2
1474 3
1475 4
1476 5
1477 6
1478 7
1479 8
1480 9
1481 0
1482 FREQ DIRECT
1483 TIMER
1484 STATION NAME

1461 FREQ UP
1468 PRES UP
1469 MONO/STEREO
1471 PRES DOWN

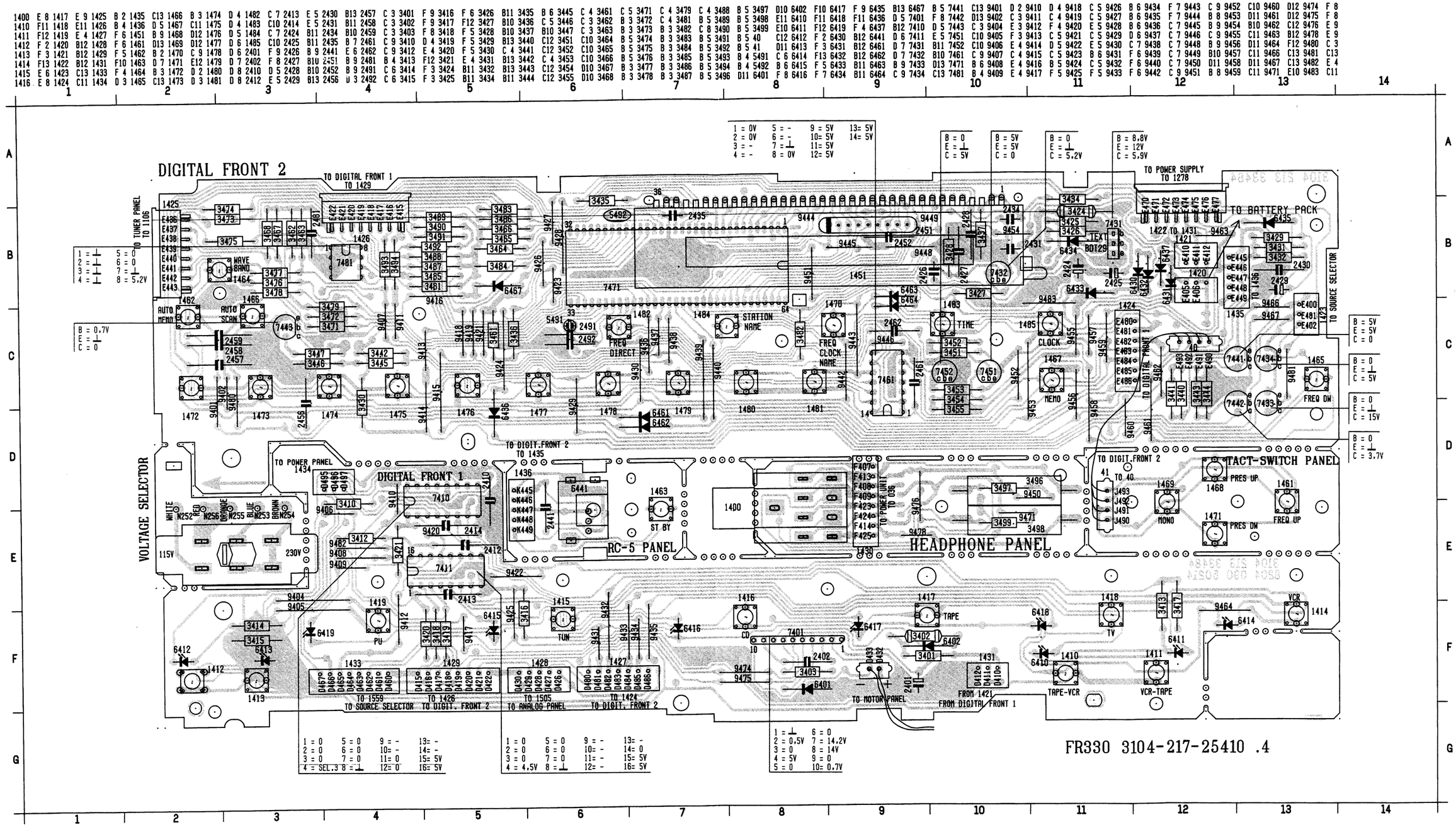
1410 TAPE/VCR
1411 VCR/TAPE
1412 A
1413 B
1414 VCR
1415 TUNER
1416 CD
1417 TAPE
1418 TV
1419 PHONO

STEREO
STEREO SIGNAL
FIELD
STEREO REQUEST
CE LM7000
DATA
CLK
OPTION
DBB/LOUDN
SURROUND
VOL UP
VOL DOWN
CE LED
CE SS
DATA
CLK

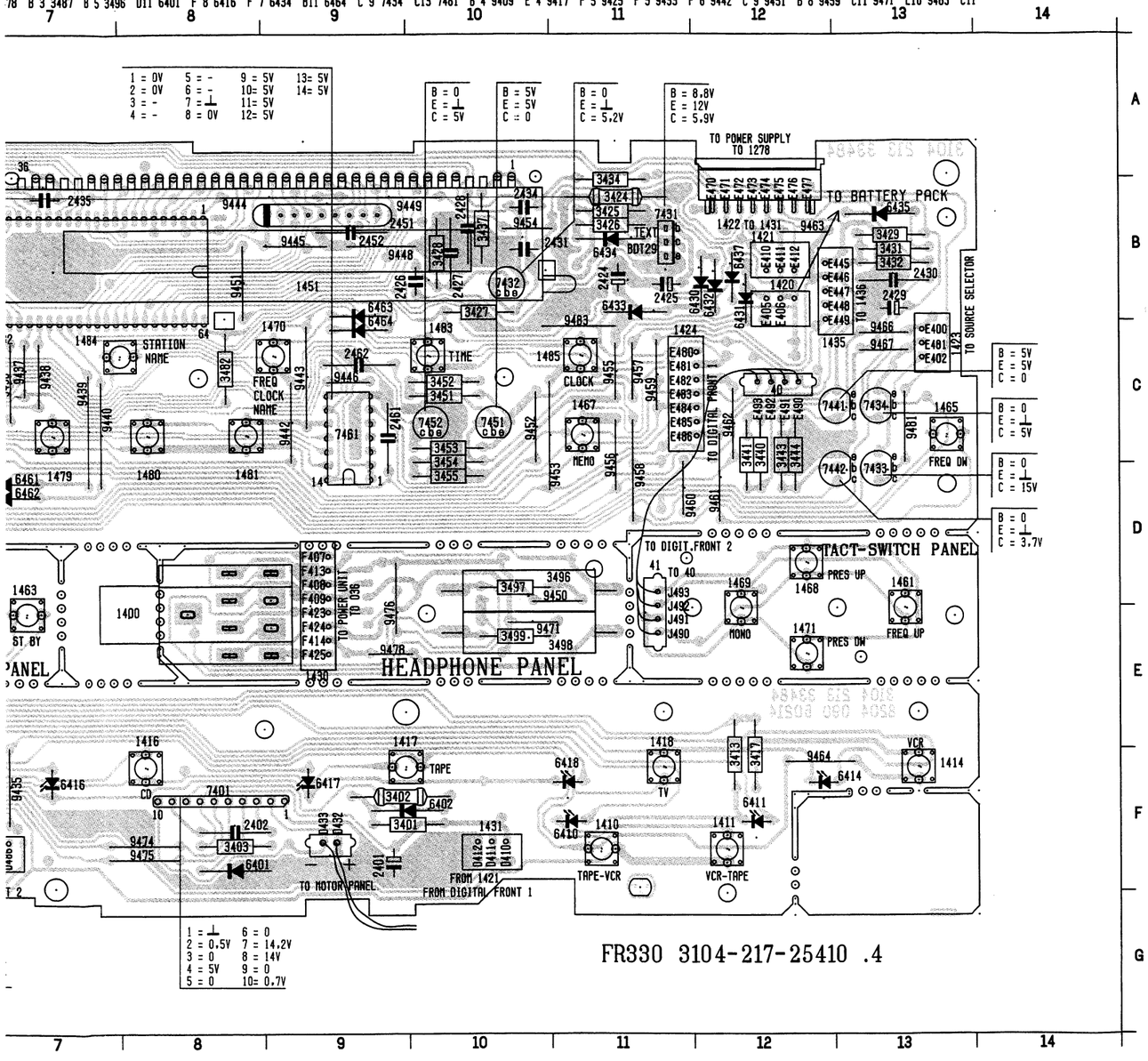
MEMORY
MW LW
FM AM
TIMER
STEREO
KHzMHz



10N	H25	6412	N27	
1410	E20	6413	N27	
1411	E20	6415	I22	
1412	D20	6416	I23	
A 1413	D20	6417	I23	
1414	E20	6418	I23	
1415	E19	6419	I24	
1416	D19	6430	C 4	
1417	E19	6431	B 3	
1418	E20	6432	B 3	
1419	D20	6433	C 4	
1420	A 1	6434	D 3	
1421	B 1	6435	F 6	
1422	D 1	6436	G 7	
B 1423	K 1	6437	B 2	
1424	C18	6461	D12	
1425	G18	6462	D12	
1426	K18	6463	E12	
1427	D19	6464	E12	
1428	F19	6465	F12	
1429	K19	6467	J12	
1435	H 4	7401	F24	
1436	H 4	7410	L26	
C 1451	P12	7411	L25	
1461	R20	7431	C 3	
1462	C12	7432	C 5	
1463	I 3	7433	E 5	
1464	D12	7434	G 5	
1465	B12	7441	H 5	
1466	C12	7442	I 7	
1467	C12	7443	J 6	
1468	B20	7451	K 5	
1469	B20	7452	L 6	
D 1470	C13	7461	F14	
1471	B20	7471	D 8	
1472	B13	7481	L14	
1473	C13			
1474	C13			
1475	D13			
1476	C14			
1477	C14			
1478	D14			
E 1479	C14			
1480	D14			
1481	D15			
1482	B15			
1483	C15			
1484	C15			
1485	C13			
2401	F27			
F 2402	G25			
2410	J25			
2412	J22			
2413	N22			
2414	N24			
2424	D 4			
2425	D 2			
2426	C 4			
2427	D 4			
2428	D 6			
2429	G 5			
G 2430	G 6			
2431	H 6			
2434	P 5			
2435	Q 5			
2441	H 3			
2451	N 7			
2452	D10			
2456	C15			
2457	C15			
H 2458	D15			
2459	D15			
2461	G15			
2462	F11			
2481	L16			
2491	A 7			
2492	A 9			
3401	F26			
3402	F26			
3403	G23			
I 3410	J26			
3412	J22			
3413	N26			
3414	M27			
3415	M27			
3416	N23			
3418	L21			
3419	L21			
3420	L21			
J 3421	N23			
3424	C 3			
3425	C 2			
3426	C 3			
3427	C 6			
3428	D 5			
3429	F 5			
3430	F 5			
3431	F 6			
3432	F 6			
K 3434	P 4			
3435	Q 4			
3436	F 7			
3437	Q 5			
3440	H 5			
3441	I 5			
3442	H 7			
3443	I 6			
3444	I 8			
3445	J 7			
L 3446	J 6			
3447	J 6			
3451	K 6			
3452	K 7			
3453	K 6			
3454	L 5			
3455	M 6			
3456	E12			
3457	E12			
3458	E13			
M 3459	E13			
3461	F13			
3462	G13			
3463	G12			
3464	G15			
3465	G14			
3466	G14			
3467	G16			
3468	G16			
N 3471	H15			
3472	H15			
3473	H15			
3474	I15			
3475	I15			
3476	I15			
3477	J15			
3478	J15			
3479	J13			
O 3481	J14			
3 82	J13			
3483	J14			
3484	J15			
3485	K15			
3486	K15			
3487	M13			
3488	M14			
3489	M14			
3490	M15			
P 3491	N15			
3492	N15			
3493	N15			
3494	N15			
3496	B24			
3497	B24			
3498	B24			
3499	B24			
5491	A 8			
5492	A 9			
Q 6401	G23			
6402	F27			
6410	M25			
6411	M26			

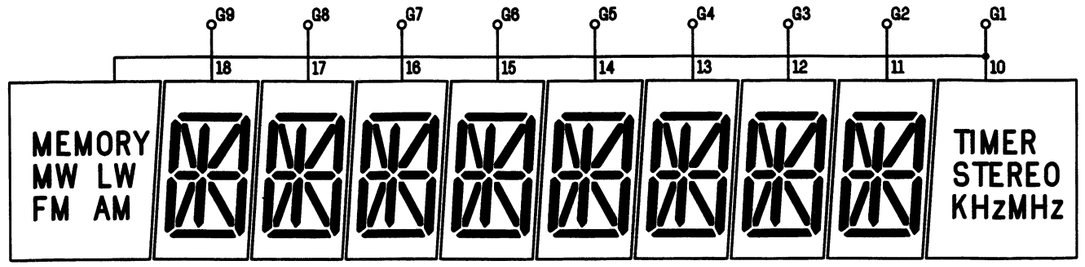

DIGITAL FRONT 2
DIGITAL FRONT 1
RC-5 PANEL
HEADPHONE PANEL
TACT-SWITCH PANEL
VOLTAGE SELECTOR
TO DIGITAL FRONT 1 TO 1429
TO POWER SUPPLY TO 1278
TO BATTERY PACK
TO TUNER PANEL TO 1106
TO SOURCE SELECTOR
TO DIGIT.FRONT 2 TO 1435
TO POWER PANEL 1434
TO DIGIT.FRONT 2
TO 40
TO POWER UNIT TO 1305
TO MOTOR PANEL
FROM 1421 FROM DIGITAL FRONT 1
WAVE BAND
AUTO MEMO
AUTO SCAN
STATION NAME
FREQ DIRECT
FREQ CLOCK NAME
TIME
CLOCK
MEMO
FREQ DW
FREQ UP
PRES UP
PRES DW
MONO
ST BY
TAPE
TV
VCR
TAPE-VCR
VCR-TAPE
PU
TUN
CD
TO 1559 TO SOURCE SELECTOR
TO 1426 TO DIGIT. FRONT 2
TO 1505 TO ANALOG PANEL
TO 1424 TO DIGIT. FRONT 2
1 = 0V 5 = - 9 = 5V 13= 5V
2 = 0V 6 = - 10= 5V 14= 5V
3 = - 7 = ⊥ 11= 5V
4 = - 8 = 0V 12= 5V
B = 0 E = ⊥ C = 5V
B = 5V E = 5V C = 0
B = 5V E = 0 C = 5,2V
B = 8,8V E = 12V C = 5,9V
B = 0,7V E = ⊥ C = 0
1 = ⊥ 5 = 0 6 = 0 7 = ⊥ 8 = 5,2V
1 = 0 5 = 0 9 = - 13= -
2 = 0 6 = 0 10= - 14= -
3 = 0 7 = 0 11= 0 15= 5V
4 = SEL.3 8 = ⊥ 12= 0 16= 5V
1 = 0 5 = 0 9 = - 13= -
2 = 0 6 = 0 10= - 14= 0
3 = 0 7 = 0 11= - 15= 5V
4 = 4,5V 8 = ⊥ 12= - 16= 5V
1 = ⊥ 6 = 0
2 = 0,5V 7 = 14,2V
3 = 0 8 = 14V
4 = 5V 9 = 0
5 = 0 10= 0,7V
FR330 3104-217-25410 .4

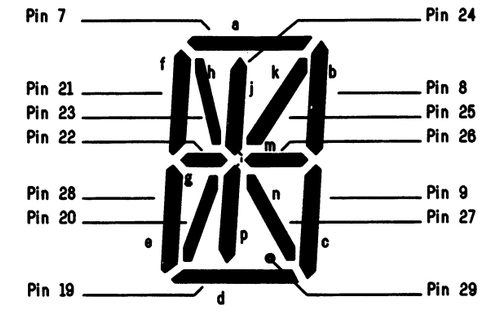
71	C 4 3479	C 4 3488	B 5 3497	D10 6402	F10 6417	F 9 6435	B13 6467	B 5 7441	C13 9401	D 2 9410	D 4 9418	C 5 9426	B 6 9434	F 7 9443	C 9 9452	C10 9460	D12 9474	F 8
72	C 4 3481	B 5 3489	B 5 3498	E11 6410	F11 6418	F11 6436	D 5 7401	F 8 7442	D13 9402	C 3 9411	C 4 9419	C 5 9427	B 6 9435	F 7 9444	B 8 9453	D11 9461	D12 9475	F 8
73	B 3 3482	C 8 3490	B 5 3499	E10 6411	F12 6419	F 4 6437	B12 7410	D 5 7443	C 3 9404	E 3 9412	F 4 9420	E 5 9428	B 6 9436	C 7 9445	B 9 9454	B10 9462	C12 9476	E 9
74	B 3 3483	B 5 3491	B 5 40	C12 6412	F 2 6430	B12 6441	D 6 7411	E 5 7451	C10 9405	F 3 9413	C 5 9421	C 5 9429	D 6 9437	C 7 9446	C 9 9455	C11 9463	B12 9478	E 9
75	B 3 3484	B 5 3492	B 5 41	D11 6413	F 3 6431	B12 6461	D 7 7431	B11 7452	C10 9406	E 4 9414	D 5 9422	E 5 9430	C 7 9438	C 7 9448	B 9 9456	D11 9464	F12 9480	C 3
76	B 3 3485	B 5 3493	B 4 5491	C 6 6414	F13 6432	B12 6462	D 7 7432	B10 7461	C 9 9407	C 4 9415	C 5 9423	B 6 9431	F 6 9439	C 7 9449	B10 9457	C11 9466	C13 9481	C13
77	B 3 3486	B 5 3494	B 4 5492	B 6 6415	F 5 6433	B11 6463	B 9 7433	D13 7471	B 6 9408	E 4 9416	B 5 9424	C 5 9432	F 6 9440	C 7 9450	D11 9458	D11 9467	C13 9482	E 4
78	B 3 3487	B 5 3496	D11 6401	F 8 6416	F 7 6434	B11 6464	C 9 7434	C13 7481	B 4 9409	E 4 9417	F 5 9425	F 5 9433	F 6 9442	C 9 9451	B 8 9459	C11 9471	E10 9483	C11



FR330 3104-217-25410 .4

GRID ASSIGMENT





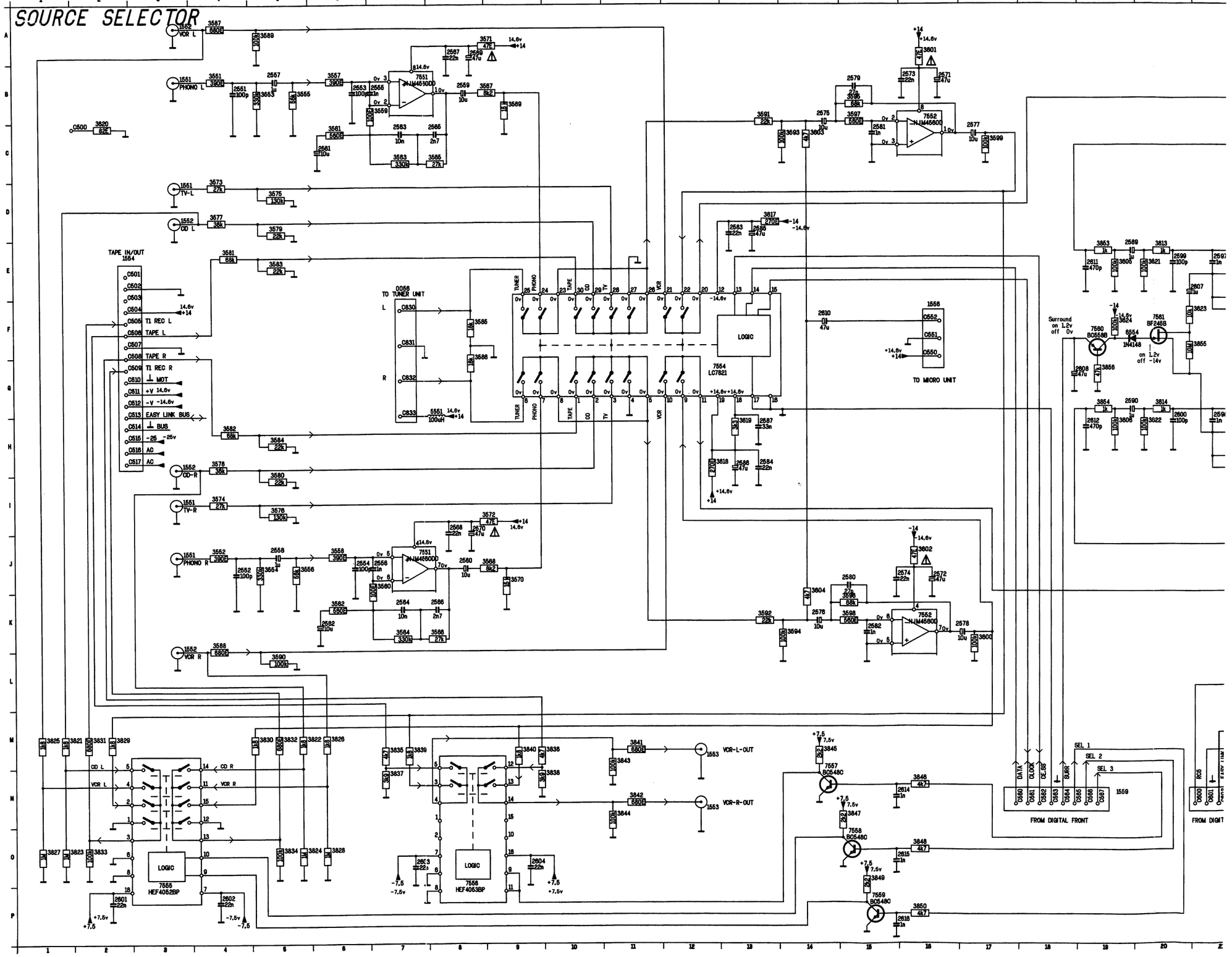
PIN CONNECTION

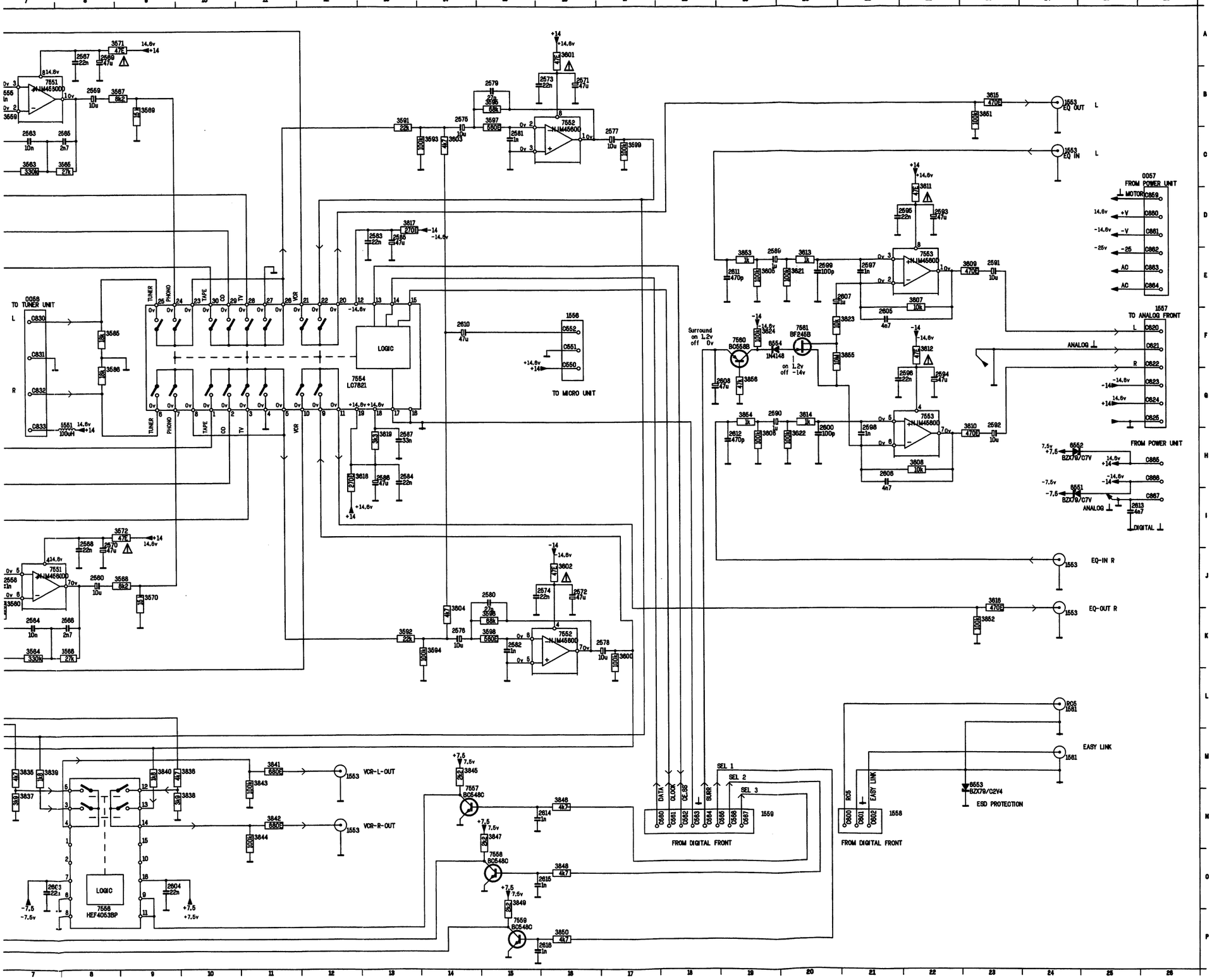
PIN NO	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F 2	F 2	N P	N P	N C	P 15	P 14	P 13	P 12	P 11	P 10	P 9	P 8	P 7	P 6	P 5	P 4	G 9	G 8	G 7	G 6	G 5	G 4	G 3	G 2	G 1	P 3	P 2	P 1	N C	N C	N P	N P	F 1	F 1

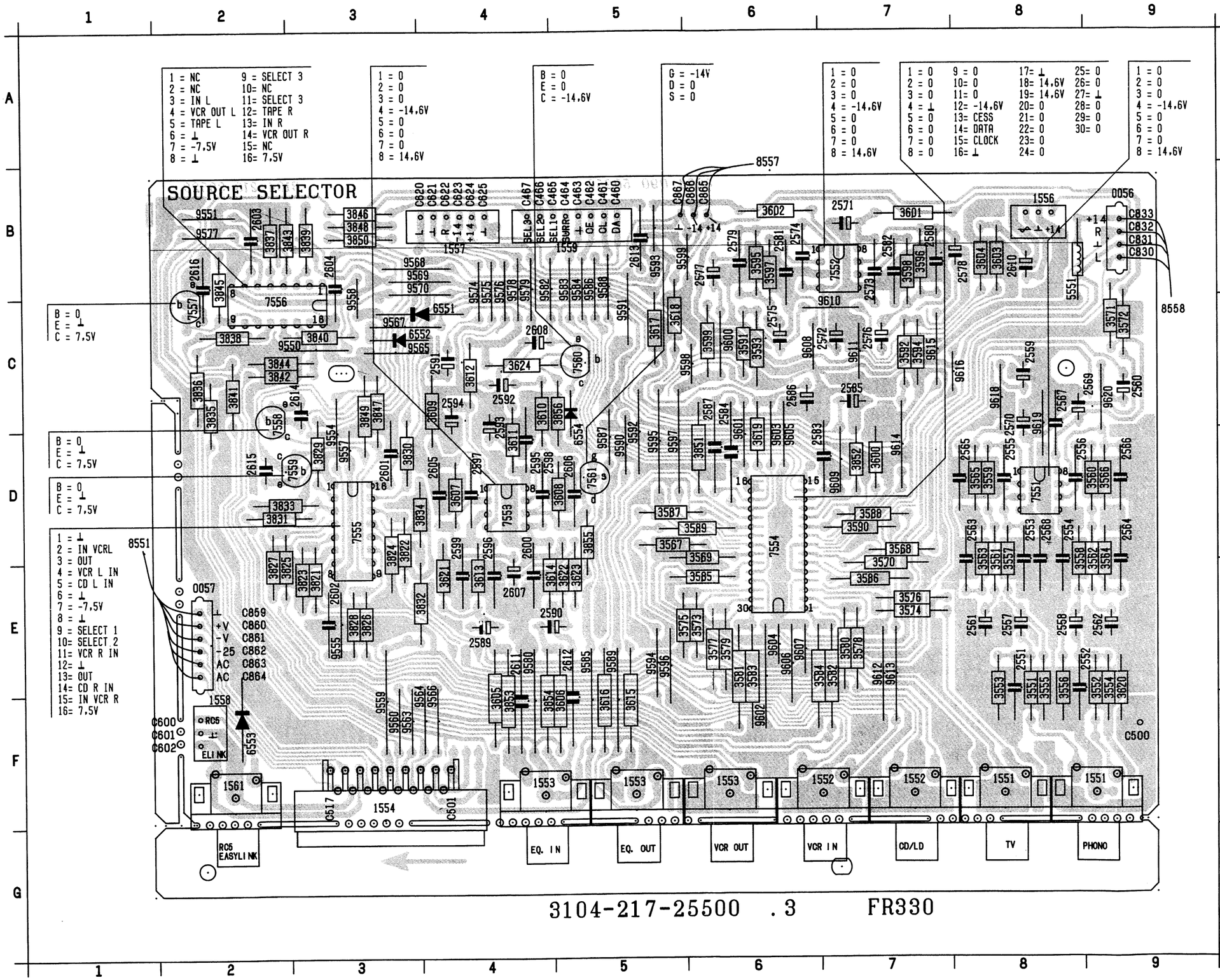
ANODE CONNECTION

	G9	G8	G7	G6	G5	G4	G3	G2	G1
P1	a	a	a	a	a	a	a	a	TIMER
P2	b	b	b	b	b	b	b	b	STEREO
P3	c	c	c	c	c	c	c	c	kHz
P4	d	d	d	d	d	d	d	d	MHz
P5	e	e	e	e	e	e	e	e	MEMORY
P6	f	f	f	f	f	f	f	f	MW
P7	g	g	g	g	g	g	g	g	LW
P8	h	h	h	h	h	h	h	h	FM
P9	j,p	j,p	j,p	j,p	j,p	j,p	j,p	j,p	AM
P10	k	k	k	k	k	k	k	k	-
P11	m	m	m	m	m	m	m	m	-
P12	n	n	n	n	n	n	n	n	-
P13	r	r	r	r	r	r	r	r	-
P14	.	.	.	.	.	.(lower)	.	.	-
P15	-	-	-	-	-	-(upper)	-	-	-

SOURCE SELECTOR




TO TUNER UNIT
TO MICRO UNIT
LOGIC
7554 LC7821
7556 HEF4053BP
FROM DIGITAL FRONT
FROM POWER UNIT
TO ANALOG FRONT
EQ OUT
EQ IN
EQ-IN R
EQ-OUT R
VCR-L-OUT
VCR-R-OUT
EASY LINK
ESD PROTECTION
SEL 1
SEL 2
SEL 3
DATA
CLOCK
CE_ASC
BUSY
ANALOG
DIGITAL



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	0057	E	2	2614	C	3	3623	E	5	9577	B	2
	1551	F	8	2615	D	2	3624	C	4	9578	B	4
	1551	F	9	2616	B	2	3821	E	3	9579	B	4
A	1552	F	7	3551	E	8	3822	D	3	9580	E	4
	1552	F	7	3552	E	9	3823	E	3	9582	B	4
	1553	F	4	3553	E	8	3824	D	3	9583	B	5
	1553	F	5	3554	E	9	3825	E	3	9584	B	5
	1553	F	6	3555	E	8	3826	E	3	9585	E	5
	1554	F	3	3556	E	8	3827	E	2	9586	B	5
	1556	B	8	3557	D	8	3828	E	3	9587	D	5
	1557	B	4	3558	D	8	3829	D	3	9588	B	5
	1558	F	2	3559	D	8	3830	D	3	9589	E	5
	1559	B	5	3560	D	9	3831	D	2	9590	D	5
	1561	F	2	3561	D	8	3832	E	4	9591	C	5
B	2551	E	8	3562	D	9	3833	D	2	9592	D	5
	2552	E	9	3563	D	8	3834	D	4	9593	B	5
	2553	D	8	3564	D	9	3835	C	2	9594	E	5
	2554	D	8	3565	D	8	3836	C	2	9595	D	5
	2555	D	8	3566	D	9	3837	B	2	9596	E	5
	2556	D	9	3567	D	5	3838	C	2	9597	D	5
	2557	E	8	3568	D	7	3839	B	3	9598	C	6
	2558	E	8	3569	E	6	3840	C	3	9599	B	6
	2559	C	8	3570	E	7	3841	C	2	9600	C	6
	2560	C	9	3571	C	9	3842	C	2	9601	C	6
	2561	E	8	3572	C	9	3843	B	3	9602	F	6
C	2562	E	9	3573	E	6	3844	C	2	9603	D	6
	2563	D	8	3574	E	7	3845	B	2	9604	E	6
	2564	D	9	3575	E	6	3846	B	3	9605	D	6
	2565	D	8	3576	E	7	3847	C	3	9606	E	6
	2566	D	9	3577	E	6	3848	B	3	9607	E	6
	2567	C	8	3578	E	7	3849	C	3	9608	C	6
	2568	D	8	3579	E	6	3850	B	3	9609	D	7
	2569	C	9	3580	E	7	3851	D	6	9610	C	7
	2570	C	8	3581	E	6	3852	D	7	9611	C	7
	2571	B	7	3582	E	7	3853	F	4	9612	E	7
	2572	C	7	3583	E	6	3854	F	4	9613	E	7
D	2573	B	7	3584	E	7	3855	D	5	9614	D	7
	2574	B	6	3585	E	6	3856	C	5	9615	C	7
	2575	C	6	3586	E	7	5551	B	8	9616	C	8
	2576	C	7	3587	D	5	6551	C	4	9618	C	8
	2577	B	6	3588	D	7	6552	C	4	9619	C	8
	2578	B	8	3589	D	6	6553	F	2	9620	C	9
	2579	B	6	3590	D	7	6554	D	5			
	2580	B	7	3591	C	6	7551	D	8			
	2581	B	6	3592	C	7	7552	B	7			
	2582	B	7	3593	C	6	7553	D	4			
	2583	D	7	3594	C	7	7554	D	6			
E	2584	C	6	3595	B	6	7555	D	3			
	2585	C	7	3596	B	7	7556	C	2			
	2586	C	6	3597	B	6	7557	C	2			
	2587	C	6	3598	B	7	7558	C	2			
	2589	E	4	3599	C	6	7559	D	3			
	2590	E	4	3600	D	7	7560	C	5			
	2591	C	4	3601	B	7	7561	D	5			
	2592	C	4	3602	B	6	8551	D	1			
	2593	C	4	3603	B	8	8557	A	6			
	2594	C	4	3604	B	8	9550	C	3			
	2595	D	4	3605	F	4	9551	B	2			
F	2596	D	4	3606	F	5	9554	D	3			
	2597	D	4	3607	D	4	9555	E	3			
	2598	D	5	3608	D	5	9557	D	3			
	2599	D	4	3609	C	4	9558	B	3			
	2600	D	4	3610	C	4	9559	F	3			
	2601	D	3	3611	D	4	9560	F	3			
	2602	E	3	3612	C	4	9563	F	3			
	2603	B	2	3613	E	4	9564	E	4			
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	2605	D	4	3615	F	5	9566	E	4			
G	2606	D	5	3616	F	5	9567	C	3			
	2607	E	4	3617	C	5	9568	B	3			
	2608	C	4	3618	C	5	9569	B	4			
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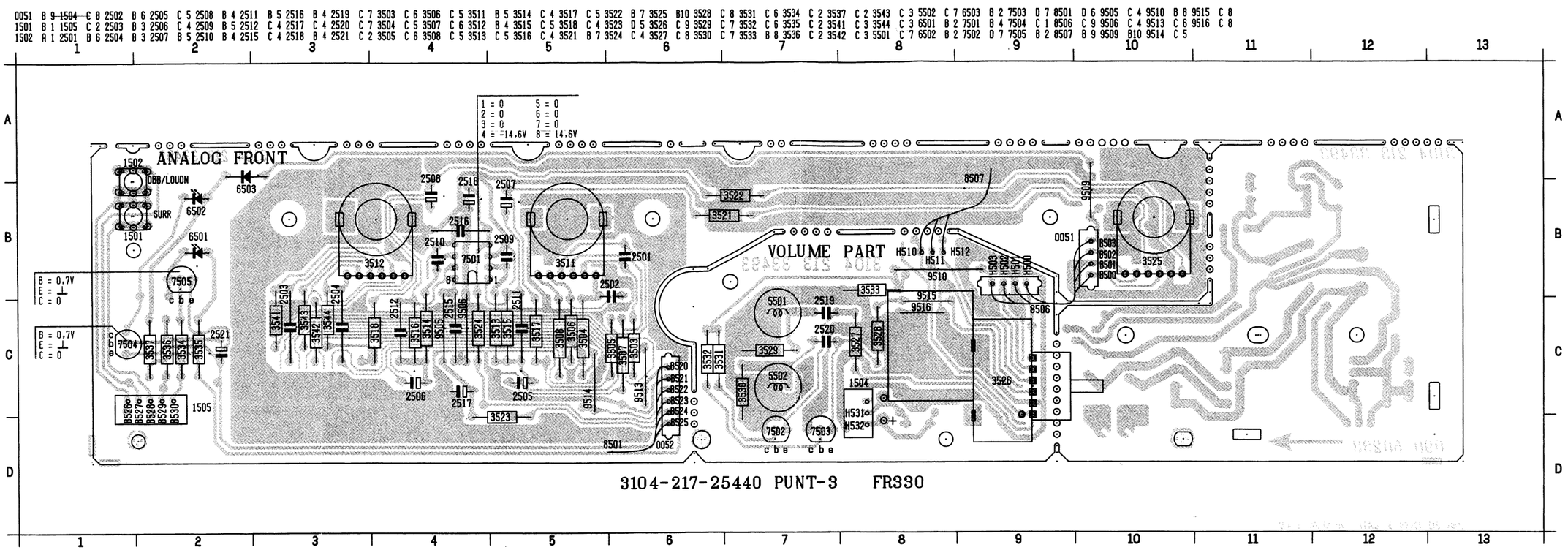

0051 B 9 1504 C 8 2502 B 6 2505 C 5 2508 B 4 2511 B 5 2516 B 4 2519 C 7 3503 C 6 3506 C 5 3511 B 5 3514 C 4 3517 C 5 3522 B 7 3525 B10 3528 C 8 3531 C 6 3534 C 2 3537 C 2 3543 C 3 5502 C 7 6503 B 2 7503 D 7 8501 D 6 9505 C 4 9510 B 8 9515 C 8
1501 B 1 1505 C 2 2503 B 3 2506 C 4 2509 B 5 2512 C 4 2517 C 4 2520 C 7 3504 C 5 3507 C 6 3512 B 4 3515 C 5 3518 C 4 3523 D 5 3526 C 9 3529 C 7 3532 C 6 3535 C 2 3541 C 3 3544 C 3 6501 B 2 7501 B 4 7504 C 1 8506 C 9 9506 C 4 9513 C 6 9516 C 8
1502 A 1 2501 B 6 2504 B 3 2507 B 5 2510 B 4 2515 C 4 2518 B 4 2521 C 2 3505 C 6 3508 C 5 3513 C 5 3516 C 4 3521 B 7 3524 C 4 3527 C 8 3530 C 7 3533 B 8 3536 C 2 3542 C 3 5501 C 7 6502 B 2 7502 D 7 7505 B 2 8507 B 9 9509 B10 9514 C 5
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D
1 = 0 5 = 0
2 = 0 6 = 0
3 = 0 7 = 0
4 = -14,6V 8 = 14,6V
ANALOG FRONT
VOLUME PART
DBB/LOUDN
SURR
B = 0,7V
E = ⊥
C = 0
c b e
3104-217-25440 PUNT-3 FR330

ANALOG FRONT

0052
FROM SOURCE SELECTOR
L
R
-14
+14
B520
B521
B522
B523 → -14.6
B524 → +14.6
B525

14.6v
+14
3523 47E
2515 22n
2517 47u

BASS 2501 27n
3503 12k
3511 A 50k
3505 12k
3517 470E
3507 16k
2503 1n2
2505 1u
84.6v
3513 560E
2509 1n
7501 NJM4560D
2507 10u
3521 100E
3525 A 10k
BALANCE
3515 560k
2511 56p
3541 4k7
3512 A 50k
TREBLE
3543 4k7

0051
TO VOLUME
B500
B501
B502
B503

-14.6v
-14
3524 47E
2516 22n
2518 47u

BASS 2502 27n
3504 12k
3511 B 50k
3506 12k
3518 470E
3508 16k
2504 1n2
2506 1u
44.6v
3514 560E
2510 1n
7501 NJM4560D
2508 10u
3522 100E
3525 B 10k
BALANCE
3516 560k
2512 56p
3542 4k7
3512 B 50k
TREBLE
3544 4k7

14.6v
+14
3535 820E
6501 LT3P82A
14.6v
+14
3537 820E
6503 BZX79/C9V
6502 LT3P82A

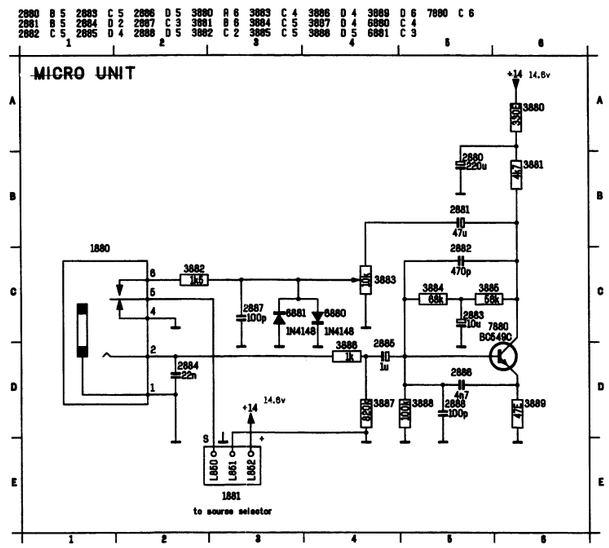
1505
FROM DIGITAL FRONT
SURROUND B530
DBB LOUNDNESS B529
B528
B527
B526
on =0.7v off= 0v
7505 BC548B
3534 1k
7504 BC548B
3536 1k
2521 47u
1501 SURR
1502 DBB LOUNDNESS

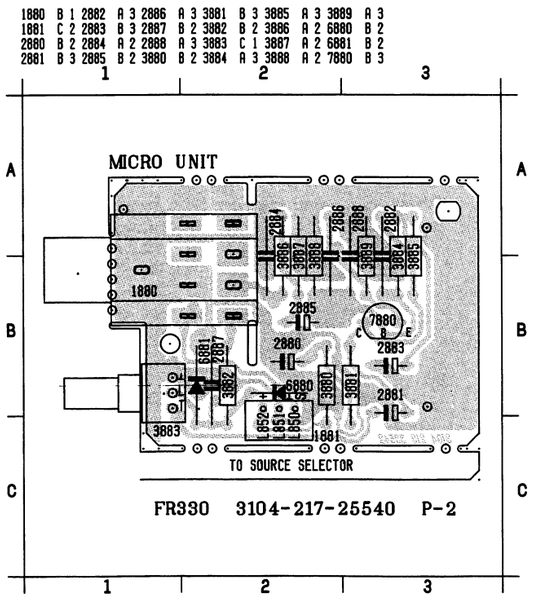
VOLUME PART

0051
TO ANALOG FRONT
H500
H501
H502
H503

1504
TO DIGITAL FRONT
H532
H531
MOTOR
3526 A 20k
3527 1k5
7502 BC338-40
3531 1k
off=0.7v on = 0v
2519 180n
3529
6501 68mH
3526 B 20k
3528 1k5
7503 BC338-40
3532 1k
3533 off=0.7v on = 0v
2520 180n
3530
6502 68mH

TO POWER PANEL
H510 L
H511
H512 R

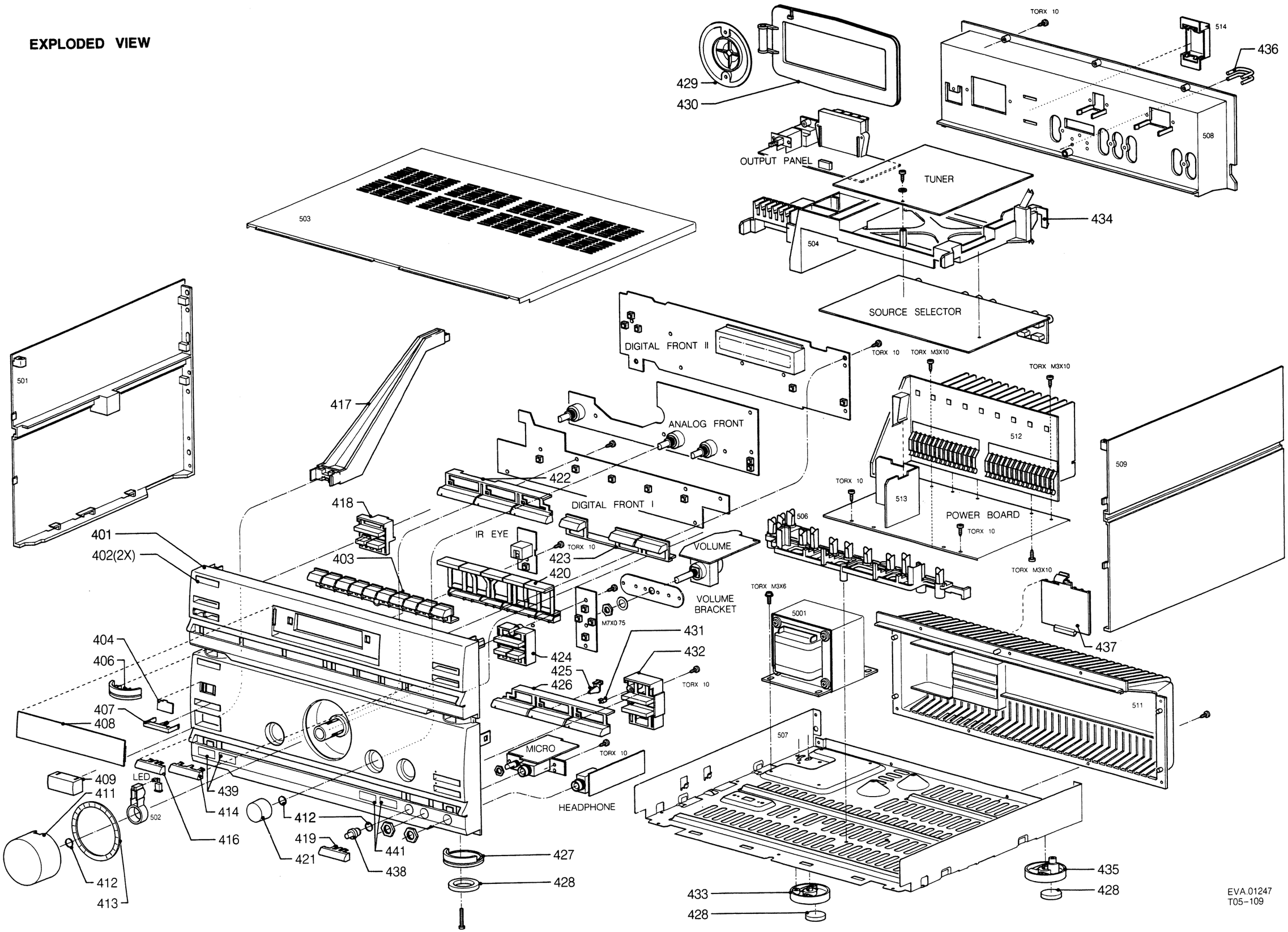




Mechanical Partslist

	4822 256 91755	DISPLAY HOLDER
401	4822 443 41003	FRONT PRINTED
402	4822 459 10887	WORDMARK "PHILIPS"
403	4822 410 61133	TUNER PRESET BUTTONS
404	4822 450 61675	WINDOW REMOTE
406	4822 462 71743	FOOT TUNER
407	4822 410 61099	BUTTON STAND BY
408	4822 450 61691	WINDOW TUNER
409	4822 410 61098	CAP POWER BUTTON
411	4822 411 61765	KNOB VOLUME
412	4822 492 63086	SPRING KNOB FIXATION
413	4822 450 61677	WINDOW VOLUME
414	4822 410 61131	FAKE BUTTON TUNER
416	4822 410 61132	FAKE BUTTON SELECTOR
417	4822 535 93188	POWER ROD
418	4822 417 11131	BUTTON WAVE BAND
419	4822 410 61132	FAKE BUTTON SELECTOR
420	4822 410 61134	BUTTONS TIMER
421	4822 413 51364	KNOB (BASS TREBLE BALANCE)
422	4822 410 61136	BUTTON PHONO/TUNER/CD
423	4822 410 61135	BUTTON MEMORY/FREQUENCY
424	4822 417 11134	BUTTON MONO/STEREO
425	4822 466 70717	LIGHT DIFFUSER SELECTOR
426	4822 410 61137	BUTTON TAPE/TV
427	4822 462 71744	FOOT AMPLIFIER
428	4822 462 41783	RUBBER FOOT BACK/FRONT
429	4822 462 71749	LOOP ANTENNA FOOT
430	4822 303 40055	FRAME AERIAL
431	4822 466 70716	LIGHT DIFFUSER SURROUND
432	4822 417 11132	BUTTON SURROUND
433	4822 462 41784	FOOT REARSIDE LEFT
434	4822 492 70854	EARTH SPRING
435	4822 462 41785	FOOT REARSIDE RIGHT
436	4822 404 21141	EQUALIZER BRIDGE
437	4822 426 60599	CAP BATTERY HOLDER
	4822 290 80901	BATTERY SPRING +/-
	4822 492 70868	BATTERY SPRING +
	4822 492 70869	BATTERY SPRING -
438	4822 410 61231	KNOB MICRO MIX
439	4822 410 61228	BUTTON SPEAKER A/B
441	4822 410 61229	BUTTON COPY TAPE/VCR

EXPLODED VIEW



MISCELLANEOUS

	4822 218 10413	IR REMOTE CONTROL
1101	4822 267 31128	COAX,ANTENNA 75 OHM
1102	4822 267 31306	TERMINAL (AM AERIAL)
1250	4822 071 54002	FUSE T4A
1251	4822 071 54002	FUSE T4A
1252	4822 071 53152	FUSE T3,5A
1253	4822 071 53152	FUSE T3,5A
1259	4822 071 51002	FUSE T1A
1260	4822 071 51002	FUSE T1A
1261	4822 071 51602	FUSE T1.6A
1262	4822 071 51602	FUSE T1.6A
1271	4822 276 13088	POWER SWITCH
1272	4822 267 31308	TERMINAL (2xSPEAKER)
1273	4822 265 20291	MAINS SOCKET
1282	4822 267 31347	PUSH TERMINAL
1400	4822 267 30968	PHONE SOCKET
1410	4822 276 13066	TACT SWITCH
1411	4822 276 13066	TACT SWITCH
1412	4822 276 13066	TACT SWITCH
1413	4822 276 13066	TACT SWITCH
1414	4822 276 13066	TACT SWITCH
1415	4822 276 13066	TACT SWITCH
1416	4822 276 13066	TACT SWITCH
1417	4822 276 13066	TACT SWITCH
1418	4822 276 13066	TACT SWITCH
1419	4822 276 13066	TACT SWITCH
1451	4822 130 90953	DISPLAY (FTD)
1461	4822 276 13066	TACT SWITCH
1462	4822 276 13066	TACT SWITCH
1463	4822 276 13066	TACT SWITCH
1464	4822 276 13066	TACT SWITCH
1465	4822 276 13066	TACT SWITCH
1466	4822 276 13066	TACT SWITCH
1467	4822 276 13066	TACT SWITCH
1468	4822 276 13066	TACT SWITCH
1469	4822 276 13066	TACT SWITCH
1470	4822 276 13066	TACT SWITCH
1471	4822 276 13066	TACT SWITCH
1472	4822 276 13066	TACT SWITCH
1473	4822 276 13066	TACT SWITCH
1474	4822 276 13066	TACT SWITCH
1475	4822 276 13066	TACT SWITCH
1476	4822 276 13066	TACT SWITCH
1477	4822 276 13066	TACT SWITCH
1478	4822 276 13066	TACT SWITCH
1479	4822 276 13066	TACT SWITCH
1480	4822 276 13066	TACT SWITCH
1481	4822 276 13066	TACT SWITCH
1482	4822 276 13066	TACT SWITCH
1483	4822 276 13066	TACT SWITCH
1484	4822 276 13066	TACT SWITCH
1485	4822 276 13066	TACT SWITCH
1501	4822 276 13066	TACT SWITCH
1502	4822 276 13066	TACT SWITCH
1551	4822 266 30293	CHINCH SOCKET
1552	4822 266 30293	CHINCH SOCKET
1554	4822 267 31307	CHINCH SOCKET
1561	4822 267 20416	CHINCH SOCKET PLATE
1880	4822 267 30968	PHONE SOCKET
5001	4822 146 30976	TRANSFORMER not /01
5001	4822 146 30987	TRANSFORMER only /01
5254	4822 280 70368	RELAY 36V
5255	4822 280 70368	RELAY 36V
5256	4822 280 70368	RELAY 36V

DIODES

4822 130 82489	GL2PR9 (LED red)		4822 130 82079	D3SBA20
4822 130 81643	BB804		4822 130 32213	BYV28-50
5322 130 31684	BB809		4822 130 34233	BZX79-B5V1
4822 130 81673	1SV149(B)		5322 130 31504	BZX79-C20
4822 130 34174	BZX79-C4V7		5322 130 32184	BYV27-50
4822 130 30621	1N4148		4822 130 31024	BZX79-C18
4822 130 61219	BZX79-C10		4822 130 34379	BZX79-C27
4822 130 30842	BAV21		4822 130 31983	BAT85
5322 130 34563	BZX79-C2V7		4822 130 81007	LED LT3P82A
4822 130 80235	BZX79-C3V3		4822 130 30861	BZX79-C7V5
4822 130 34167	BZX79-C6V2		4822 130 81254	IR-EYE
5322 130 30684	1N4002		4822 130 30862	BZX79-C9V1
4822 130 34281	BZX79-C15		4822 130 31253	BZX79-C2V4
4822 130 82078	D5SBA20			

TRANSISTORS

4822 130 60163	2SC1047	4822 130 44503	BC547C
4822 130 60093	2SA838B	4822 130 62269	BDT65C
4822 130 44154	BF199	4822 130 62268	BDT64
4822 130 40937	BC548B	5322 130 61575	BDT64C
5322 130 44779	BC338-40	4822 130 40959	BC547B
5322 130 41982	BC848 (CHIP)	4822 130 42629	BD331
4822 130 41024	BF245B	4822 130 41774	BD826
4822 130 44196	BC548C	4822 130 41715	BC328-40
4822 130 44197	BC558B	4822 130 40824	BD136
4822 130 41691	BC556B	4822 130 60784	BDT61
5322 130 44413	BF457	4822 130 44246	BC549C

INTEGRATED CIRCUITS

4822 209 72744	CXA1240P	4822 209 63727	TMP 47C870 N
4822 209 71321	AN7411	4822 209 62098	ST24C02CP
4822 209 71331	LM7000	4822 209 70157	NJM4560DD
4822 209 83274	NJM4560D	4822 209 72748	LC7821
4822 209 63667	BA6229 MOTOR DRIVER	4822 209 10263	HEF4052BP
4822 209 61522	PC74HCT4094P	5322 209 10576	HEF4053BP
5322 209 11268	PC74HCT164P		

COILS

5001	4822 157 63158	AM OSCILLATOR COIL	5111	4822 157 63163	FM IF COIL only /02
5101	4822 156 30947	RF COIL 1,5 TURNS	5112	4822 242 72976	QUARTZ 2,7MHz
5102	4822 156 30947	RF COIL 1,5 TURNS	5113	4822 157 60147	COIL 2,2uH
5103	4822 156 30947	RF COIL 1,5 TURNS	5114	4822 158 60509	BIRDY FILTER
5104	4822 157 60284	FM OSC COIL not /02	5115	4822 157 60147	COIL 2,2uH
5104	4822 157 63288	FM OSC COIL only /02	5116	4822 157 63032	LW AERIAL COIL
5105	4822 157 63031	AM OSC COIL not /02	5118	4822 152 20699	560uH
5105	4822 157 63158	AM OSC COIL only /02	5252	4822 157 62255	COIL 18,5 TURNS
5106	4822 157 53192	0,22uH	5253	4822 157 62255	COIL 18,5 TURNS
5107	4822 242 72096	CER.FILT.KIT 10,7MHz	5491	4822 242 80206	X-TAL 32,768kHz
5108	4822 157 63029	AM IF COIL	5492	4822 242 73769	CER.RES. 4,194MHz
5109	4822 242 71878	CERAM.RES. 450kHz	5501	4822 157 63209	68mH
5110	4822 157 63033	MW AERIAL not 2Band	5502	4822 157 63209	68mH
5110	4822 157 63159	MW AERIAL only 2Band	5551	4822 157 53123	100uH
5111	4822 157 63028	FM IF COIL not /02			

RESISTORS

3105	4822 050 23901	390R	1%	0,6W	3135	4822 050 22201	220R	2%	0,25W
3106	4822 116 52224	470R	5%	0,5W	3139	4822 050 24702	4k7	1%	0,6W
3107	4822 050 24702	4k7	1%	0,6W	3141	4822 050 21003	10k	2%	0,25W
3111	4822 050 24703	47k	1%	0,6W	3142	4822 050 22201	220R	2%	0,25W
3114	4822 100 11141	10k TRIM POT			3143	4822 050 22203	22k	1%	0,6W
3116	4822 050 22201	220R	2%	0,25W	3145	4822 100 11141	10k TRIM POT		
3120	4822 050 23903	39k	1%	0,6W	3147	4822 050 22201	220R	2%	0,25W
3125	4822 050 24702	4k7	1%	0,6W	3148	4822 050 21003	10k	2%	0,25W
3128	4822 050 24702	4k7	1%	0,6W	3149	4822 050 21002	1k	1%	0,6W
3131	4822 050 23301	330R	2%	0,25W	3150	4822 050 21002	1k	1%	0,6W
3132	4822 050 26801	680R	1%	0,6W	3151	4822 050 21002	1k	1%	0,6W
3134	4822 050 24702	4k7	1%	0,6W	3153	4822 050 21002	1k	1%	0,6W

RESISTORS

3171	4822 050 26801	680R	1%	0,6W
3173	4822 050 21002	1k	1%	0,6W
3250	4822 050 22202	2k2	1%	0,6W
3251	4822 050 22202	2k2	1%	0,6W
3252	4822 050 24702	4k7	1%	0,6W
3253	4822 050 24702	4k7	1%	0,6W
3254	4822 050 22202	2k2	1%	0,6W
3255	4822 050 22202	2k2	1%	0,6W
3256	4822 050 24702	4k7	1%	0,6W
3257	4822 050 24702	4k7	1%	0,6W
3258	4822 050 22203	22k	1%	0,6W
3259	4822 050 22203	22k	1%	0,6W
3260	4822 050 22203	22k	1%	0,6W
3261	4822 050 21003	10k	2%	0,25W
3264	4822 050 21002	1k	1%	0,6W
3265	4822 050 21002	1k	1%	0,6W
3266	4822 050 21801	180R	1%	0,6W
3267	4822 050 21801	180R	1%	0,6W
3268	4822 050 22203	22k	1%	0,6W
3269	4822 050 22203	22k	1%	0,6W
3270	4822 053 10122	1k2	5%	1W
3271	4822 053 10122	1k2	5%	1W
3272	4822 052 10681	680R	5%	0,33W
3273	4822 052 10681	680R	5%	0,33W
3274	4822 050 22202	2k2	1%	0,6W
3275	4822 050 22202	2k2	1%	0,6W
3276	4822 050 16809	68R	1%	0,4W
3277	4822 050 16809	68R	1%	0,4W
3278	4822 053 12152	1k5	5%	3W
3279	4822 053 12152	1k5	5%	3W
3280	4822 053 11152	1k5	5%	2W
3281	4822 053 11152	1k5	5%	2W
3282	4822 050 22202	2k2	1%	0,6W
3283	4822 050 22202	2k2	1%	0,6W
3284	4822 101 10927	470R	POTMETER	
3285	4822 101 10927	470R	POTMETER	
3286	4822 050 28201	820R	1%	0,6W
3287	4822 050 28201	820R	1%	0,6W
3288	4822 053 10302	3k	5%	1W
3289	4822 053 10302	3k	5%	1W
3290	4822 053 11222	2k2	5%	2W
3291	4822 053 11222	2k2	5%	2W
3294	4822 050 21801	180R	1%	0,6W
3295	4822 050 21801	180R	1%	0,6W
3296	4822 050 22201	220R	2%	0,25W
3297	4822 050 22201	220R	2%	0,25W
3298	4822 116 52224	470R	5%	0,5W
3299	4822 116 52224	470R	5%	0,5W
3300	4822 050 21003	10k	2%	0,25W
3301	4822 050 21003	10k	2%	0,25W
3302	4822 116 52224	470R	5%	0,5W
3303	4822 116 52224	470R	5%	0,5W
3304	4822 113 80525	0R15	10%	3W
3305	4822 113 80525	0R15	10%	3W
3306	4822 113 80525	0R15	10%	3W
3307	4822 113 80525	0R15	10%	3W
3308	4822 050 28203	82k	1%	0,6W
3309	4822 050 28203	82k	1%	0,6W
3310	4822 050 28203	82k	1%	0,6W
3311	4822 050 22203	22k	1%	0,6W
3312	4822 050 24703	47k	1%	0,6W
3313	4822 050 22203	22k	1%	0,6W
3314	4822 050 26803	68k	1%	0,6W
3315	4822 050 21501	150R	1%	0,6W
3316	4822 050 24702	4k7	1%	0,6W
3318	4822 050 21002	1k	1%	0,6W
3319	4822 050 21002	1k	1%	0,6W
3328	4822 116 52224	470R	5%	0,5W
3329	4822 116 52224	470R	5%	0,5W
3330	4822 050 21003	10k	2%	0,25W
3331	4822 050 21003	10k	2%	0,25W
3332	4822 050 23302	3k3	1%	0,6W
3333	4822 116 80562	10R	5%	NFR
3334	4822 050 22702	2k7	1%	0,6W
3335	4822 052 10229	22R	5%	0,33W
3336	4822 050 21002	1k	1%	0,6W
3337	4822 053 10109	10R	5%	1W
3338	4822 053 10109	10R	5%	1W
3339	4822 052 10108	1R	5%	0,33W
3340	4822 050 22204	220k	1%	0,6W
3341	4822 050 22204	220k	1%	0,6W
3342	4822 116 80562	10R	5%	NFR
3343	4822 116 80335	47R	5%	NFR
3344	4822 050 21802	1k8	1%	0,6W
3345	4822 050 21202	1k2	1%	0,6W
3352	4822 050 21002	1k	1%	0,6W
3353	4822 050 21002	1k	1%	0,6W
3354	4822 116 52224	470R	5%	0,5W
3355	4822 116 52224	470R	5%	0,5W
3358	4822 116 80311	4,7R	5%	NFR
3359	4822 116 80311	4,7R	5%	NFR
3364	4822 050 22204	220k	1%	0,6W
3365	4822 050 22204	220k	1%	0,6W
3368	4822 116 80562	10R	5%	NFR
3369	4822 116 80562	10R	5%	NFR
3370	4822 050 22203	22k	1%	0,6W
3371	4822 050 22203	22k	1%	0,6W
3372	4822 050 21003	10k	2%	0,25W
3373	4822 050 21003	10k	2%	0,25W
3374	4822 050 21003	10k	2%	0,25W
3377	4822 050 22203	22k	1%	0,6W
3378	4822 050 22203	22k	1%	0,6W

RESISTORS

3379	4822 050 22203	22k	1%	0,6W
3380	4822 116 80562	10R	5%	NFR
3381	4822 116 80562	10R	5%	NFR
3384	4822 050 21003	10k	2%	0,25W
3386	4822 116 52263	2k7	5%	0,5W
3401	4822 116 82366	2R2	5%	
3402	4822 053 10159	15R	5%	1W
3403	4822 050 22202	2k2	1%	0,6W
3410	4822 116 80311	4,7R	5%	NFR
3412	4822 116 80311	4,7R	5%	NFR
3413	4822 050 22201	220R	2%	0,25W
3414	4822 050 22201	220R	2%	0,25W
3415	4822 050 22201	220R	2%	0,25W
3416	4822 050 22201	220R	2%	0,25W
3417	4822 050 22201	220R	2%	0,25W
3418	4822 050 21002	1k	1%	0,6W
3419	4822 050 21002	1k	1%	0,6W
3420	4822 050 21002	1k	1%	0,6W
3421	4822 050 21002	1k	1%	0,6W
3424	4822 116 80562	10R	5%	NFR
3425	4822 050 22202	2k2	1%	0,6W
3426	4822 050 22201	220R	2%	0,25W
3427	4822 050 21003	10k	2%	0,25W
3428	4822 116 52234	100k	5%	0,5W
3429	4822 050 25603	56k	1%	0,6W
3430	4822 050 24702	4k7	1%	0,6W
3431	4822 050 22202	2k2	1%	0,6W
3432	4822 050 21003	10k	2%	0,25W
3434	4822 116 80311	4,7R	5%	NFR
3435	4822 116 80311	4,7R	5%	NFR
3436	4822 050 24702	4k7	1%	0,6W
3437	4822 050 24703	47k	1%	0,6W
3440	4822 050 24703	47k	1%	0,6W
3441	4822 050 24703	47k	1%	0,6W
3442	4822 050 24702	4k7	1%	0,6W
3443	4822 050 24703	47k	1%	0,6W
3444	4822 050 21803	18k	1%	0,6W
3445	4822 050 21003	10k	2%	0,25W
3446	4822 050 21003	10k	2%	0,25W
3447	4822 050 23301	330R	2%	0,25W
3451	4822 050 24703	47k	1%	0,6W
3452	4822 050 24703	47k	1%	0,6W
3453	4822 050 24702	4k7	1%	0,6W
3454	4822 050 24703	47k	1%	0,6W
3455	4822 050 21803	18k	1%	0,6W
3456	4822 050 21003	10k	2%	0,25W
3457	4822 050 21003	10k	2%	0,25W
3458	4822 050 21003	10k	2%	0,25W
3459	4822 050 21003	10k	2%	0,25W
3461	4822 050 24702	4k7	1%	0,6W
3462	4822 050 24702	4k7	1%	0,6W
3463	4822 050 24702	4k7	1%	0,6W
3464	4822 050 24702	4k7	1%	0,6W
3465	4822 050 24702	4k7	1%	0,6W
3466	4822 050 24702	4k7	1%	0,6W
3467	4822 050 21003	10k	2%	0,25W
3468	4822 050 22704	270k	1%	0,6W
3471	4822 050 21002	1k	1%	0,6W
3472	4822 050 21002	1k	1%	0,6W
3473	4822 050 21002	1k	1%	0,6W
3474	4822 050 21002	1k	1%	0,6W
3475	4822 050 21002	1k	1%	0,6W
3476	4822 050 21002	1k	1%	0,6W
3477	4822 050 21002	1k	1%	0,6W
3478	4822 050 21002	1k	1%	0,6W
3479	4822 116 52234	100k	5%	0,5W
3481	4822 050 24702	4k7	1%	0,6W
3482	4822 050 24702	4k7	1%	0,6W
3483	4822 050 24702	4k7	1%	0,6W
3484	4822 050 24702	4k7	1%	0,6W
3485	4822 050 21002	1k	1%	0,6W
3486	4822 050 21002	1k	1%	0,6W
3487	4822 050 24702	4k7	1%	0,6W
3488	4822 050 24702	4k7	1%	0,6W
3489	4822 050 24702	4k7	1%	0,6W
3490	4822 050 24702	4k7	1%	0,6W
3491	4822 050 21002	1k	1%	0,6W
3492	4822 050 21002	1k	1%	0,6W
3493	4822 050 21002	1k	1%	0,6W
3494	4822 050 21002	1k	1%	0,6W
3496	4822 113 80571	470R		
3497	4822 050 28209	82R	1%	0,6W
3498	4822 113 80571	470R		
3499	4822 050 28209	82R	1%	0,6W
3503	4822 050 21203	12k	1%	0,6W
3504	4822 050 21203	12k	1%	0,6W
3505	4822 050 21203	12k	1%	0,6W
3506	4822 050 21203	12k	1%	0,6W
3507	4822 116 52244	15k	5%	0,5W
3508	4822 116 52244	15k	5%	0,5W
3511	4822 102 10422	POTMETER 2x 50k		
3512	4822 102 10422	POTMETER 2x 50k		
3515	4822 050 25604	560k	1%	0,6W
3516	4822 050 25604	560k	1%	0,6W
3517	4822 116 52224	470R	5%	0,5W
3518	4822 116 52224	470R	5%	0,5W
3523	4822 116 80335	47R	5%	NFR
3524	4822 116 80335	47R	5%	NFR
3525	4822 102 10413	POTMETER 2x 10k		
3526	4822 102 10414	POTM. 2x20kB		
3527	4822 050 21502	1k5	1%	0,6W
3528	4822 050 21502	1k5	1%	0,6W

RESISTORS

3529	4822 050 24702	4k7	1%	0,6W
3530	4822 050 24702	4k7	1%	0,6W
3531	4822 050 21002	1k	1%	0,6W
3532	4822 050 21002	1k	1%	0,6W
3533	4822 116 52234	100k	5%	0,5W
3534	4822 050 21002	1k	1%	0,6W
3535	4822 050 28201	820R	1%	0,6W
3536	4822 050 21002	1k	1%	0,6W
3537	4822 050 28201	820R	1%	0,6W
3541	4822 050 24702	4k7	1%	0,6W
3542	4822 050 24702	4k7	1%	0,6W
3543	4822 050 24702	4k7	1%	0,6W
3544	4822 050 24702	4k7	1%	0,6W
3551	4822 050 23901	390R	1%	0,6W
3552	4822 050 23901	390R	1%	0,6W
3553	4822 116 52272	330k	5%	0,5W
3554	4822 116 52272	330k	5%	0,5W
3555	4822 050 25603	56k	1%	0,6W
3556	4822 050 25603	56k	1%	0,6W
3557	4822 050 23901	390R	1%	0,6W
3558	4822 050 23901	390R	1%	0,6W
3563	4822 116 52272	330k	5%	0,5W
3564	4822 116 52272	330k	5%	0,5W
3565	4822 116 52264	27k	5%	0,5W
3566	4822 116 52264	27k	5%	0,5W
3567	4822 116 52303	8k2	5%	0,5W
3568	4822 116 52303	8k2	5%	0,5W
3569	4822 116 52244	15k	5%	0,5W
3570	4822 116 52244	15k	5%	0,5W
3571	4822 116 80335	47R	5%	NFR
3572	4822 116 80335	47R	5%	NFR
3573	4822 116 52264	27k	5%	0,5W
3574	4822 116 52264	27k	5%	0,5W
3575	4822 050 21304	130k	1%	0,6W
3576	4822 050 21304	130k	1%	0,6W
3577	4822 050 23603	36k	1%	0,6W
3578	4822 050 23603	36k	1%	0,6W
3579	4822 050 22203	22k	1%	0,6W
3580	4822 050 22203	22k	1%	0,6W
3581	4822 050 26803	68k	1%	0,6W
3582	4822 050 26803	68k	1%	0,6W
3583	4822 050 22203	22k	1%	0,6W
3584	4822 050 22203	22k	1%	0,6W
3585	4822 050 21803	18k	1%	0,6W
3586	4822 050 21803	18k	1%	0,6W
3587	4822 050 26801	680R	1%	0,6W
3588	4822 050 26801	680R	1%	0,6W
3589	4822 116 52234	100k	5%	0,5W
3590	4822 116 52234	100k	5%	0,5W
3591	4822 050 22203	22k	1%	0,6W
3592	4822 050 22203	22k	1%	0,6W
3593	4822 116 52234	100k	5%	0,5W
3594	4822 116 52234	100k	5%	0,5W
3595	4822 050 26803	68k	1%	0,6W
3596	4822 050 26803	68k	1%	0,6W
3599	4822 116 52234	100k	5%	0,5W
3600	4822 116 52234	100k	5%	0,5W
3601	4822 116 80335	47R	5%	NFR
3602	4822 116 80335	47R	5%	NFR
3603	4822 050 24702	4k7	1%	0,6W
3604	4822 050 24702	4k7	1%	0,6W
3605	4822 116 52234	100k	5%	0,5W
3606	4822 116 52234	100k	5%	0,5W
3607	4822 050 21003	10k	2%	0,25W
3608	4822 050 21003	10k	2%	0,25W
3609	4822 116 52224	470R	5%	0,5W
3610	4822 116 52224	470R	5%	0,5W
3611	4822 116 80335	47R	5%	NFR
3612	4822 116 80335	47R	5%	NFR
3613	4822 050 21002	1k	1%	0,6W
3614	4822 050 21002	1k	1%	0,6W
3615	4822 116 52224	470R	5%	0,5W
3616	4822 116 52224	470R	5%	0,5W
3617	4822 116 52217	270R	5%	0,5W
3618	4822 116 52217	270R	5%	0,5W
3619	4822 050 23302	3k3	1%	0,6W
3620	4822 050 28209	82R	1%	0,6W
3621	4822 116 52234	100k	5%	0,5W
3622	4822 116 52234	100k	5%	0,5W
3623	4822 050 21003	10k	2%	0,25W
3624	4822 116 52234	100k	5%	0,5W
3823	4822 050 21005	1M	1%	0,6W
3824	4822 050 21005	1M	1%	0,6W
3827	4822 050 21005	1M	1%	0,6W
3828	4822 050 21005	1M	1%	0,6W
3831	4822 050 26801	680R	1%	0,6W
3832	4822 050 26801	680R	1%	0,6W
3833	4822 116 52234	100k	5%	0,5W
3834	4822 116 52234	100k	5%	0,5W
3835	4822 050 24702	4k7	1%	0,6W
3836	4822 050 24702	4k7	1%	0,6W
3837	4822 050 23902	3k9	1%	0,6W
3838	4822 050 23902	3k9	1%	0,6W
3841	4822 050 26801	680R	1%	0,6W
3842	4822 050 26801	680R	1%	0,6W
3843	4822 116 52234	100k	5%	0,5W
3844	4822 116 52234	100k	5%	0,5W
3845	4822 050 22202	2k2	1%	0,6W
3846	4822 050 24702	4k7	1%	0,6W
3847	4822 050 22202	2k2	1%	0,6W
3848	4822 050 24702	4k7	1%	0,6W
3849	4822 050 22202	2k2	1%	0,6W

RESISTORS

3850	4822 050 24702	4k7	1%	0,6W
3851	4822 116 52234	100k	5%	0,5W
3852	4822 116 52234	100k	5%	0,5W
3853	4822 050 21002	1k	1%	0,6W
3854	4822 050 21002	1k	1%	0,6W
3855	4822 050 21006	10M	1%	0,6W
3856	4822 050 24703	47k	1%	0,6W
3880	4822 050 23301	330R	2%	0,25W
3881	4822 050 24702	4k7	1%	0,6W
3882	4822 050 21502	1k5	1%	0,6W
3883	4822 100 20841	10K		
3884	4822 050 26803	68k	1%	0,6W
3885	4822 050 25603	56k	1%	0,6W
3886	4822 050 21002	1k	1%	0,6W
3887	4822 050 28204	820k	1%	0,6W
3888	4822 116 52234	100k	5%	0,5W
3889	4822 050 14709	47R	1%	0,4W

CHIP RESISTORS

3101	4822 051 20473	47k	5%	0,1W
3102	4822 051 20333	33k	5%	0,1W
3103	4822 051 10472	4k7	2%	0,25W
3104	4822 051 10102	1k	2%	0,25W
3108	4822 051 10122	1k2	2%	0,25W
3109	4822 051 10101	100R	2%	0,25W
3110	4822 051 10101	100R	2%	0,25W
3112	4822 051 20562	5k6	5%	0,1W
3112	4822 051 20008	CHIP JUMPER		
3113	4822 051 20689	68R	5%	0,1W
3115	4822 051 10479	47R		
3117	4822 051 10103	10k	2%	0,25W
3118	4822 051 20271	270R	5%	0,1W
3119	4822 051 20273	27k	5%	0,1W
3121	4822 051 20104	100k	5%	0,1W
3122	4822 051 10272	2k7	2%	0,25W
3124	4822 051 10008	JUMPER		
3126	4822 051 10472	4k7	2%	0,25W
3127	4822 051 20472	4k7	5%	0,1W
3129	4822 051 20104	100k	5%	0,1W
3130	4822 051 20104	100k	5%	0,1W
3133	4822 051 20223	22k	5%	0,1W
3136	4822 051 10153	15k	2%	0,25W
3137	4822 051 20562	5k6	5%	0,1W
3138	4822 051 20472	4k7	5%	0,1W
3140	4822 051 10102	1k	2%	0,25W
3144	4822 051 20183	18k	5%	0,1W
3146	4822 051 10821	820R	2%	0,25W
3155	4822 051 20332	3k3	5%	0,1W
3156	4822 051 10103	10k	2%	0,25W
3157	4822 051 10008	JUMPER		
3158	4822 051 20104	100k	5%	0,1W
3160	4822 051 10008	JUMPER		
3161	4822 051 20473	47k	5%	0,1W
3162	4822 051 20479	47R	5%	0,1W
3163	4822 051 20562	5k6	5%	0,1W
3164	4822 051 20008	CHIP JUMPER		
3165	4822 051 20473	47k	5%	0,1W
3170	4822 051 10008	JUMPER		
3172	4822 051 20223	22k	5%	0,1W
3174	4822 051 10102	1k	2%	0,25W
3175	4822 051 10331	330R	2%	0,25W
3176	4822 051 20271	270R	5%	0,1W
3177	4822 051 10151	150R	2%	0,25W
3178	4822 051 20223	22k	5%	0,1W
3179	4822 051 10472	4k7	2%	0,25W
3292	4822 051 10101	100R	2%	0,25W
3293	4822 051 10101	100R	2%	0,25W
3356	4822 051 10101	100R	2%	0,25W
3357	4822 051 10101	100R	2%	0,25W
3385	4822 051 10101	100R	2%	0,25W
3513	4822 051 10561	560R	2%	0,25W
3514	4822 051 10561	560R	2%	0,25W
3521	4822 051 10101	100R	2%	0,25W
3522	4822 051 10101	100R	2%	0,25W
3559	4822 051 10101	100R	2%	0,25W
3560	4822 051 10101	100R	2%	0,25W
3561	4822 051 10561	560R	2%	0,25W
3562	4822 051 10561	560R	2%	0,25W
3597	4822 051 10561	560R	2%	0,25W
3598	4822 051 10561	560R	2%	0,25W
3821	4822 051 10182	1k8	2%	0,25W
3822	4822 051 10182	1k8	2%	0,25W
3825	4822 051 10182	1k8	2%	0,25W
3826	4822 051 10182	1k8	2%	0,25W
3829	4822 051 10182	1k8	2%	0,25W
3830	4822 051 10182	1k8	2%	0,25W
3839	4822 051 10182	1k8	2%	0,25W
3840	4822 051 10182	1k8	2%	0,25W

CAPACITORS

2100	4822 122 31555	120pF	5%	50V
2101	4822 122 10179	33pF	5%	50V
2103	4822 125 50355	4,2-20pF VARIABLE		
2109	4822 125 50355	4,2-20pF VARIABLE		
2111	4822 125 60102	30pF VAR not /02		
2111	4822 125 50355	4,2-20pF only /02		
2115	5322 122 32481	15pF	5%	50V
2116	5322 122 32481	15pF	5%	50V

CAPACITORS

2119	4822	124	41554	220uF	20%	10V	2264	4822	126	11307	180pF	10%	500V
2121	4822	122	31435	470pF	10%	50V	2265	4822	126	11307	180pF	10%	500V
2122	4822	122	31385	22pF	5%	50V	2266	4822	122	31693	560pF	10%	50V
2123	4822	122	31555	120pF	5%	50V	2267	4822	122	31693	560pF	10%	50V
2130	4822	124	40178	100uF	20%	10V	2268	4822	122	10173	820pF	10%	50V
2131	4822	124	40244	2,2uF	20%	63V	2269	4822	122	10173	820pF	10%	50V
2134	5322	121	50999	470pF	not 2 Band		2270	4822	124	42151	100uF	20%	50V
2134	4822	121	51381	560pF	only 2 Band		2271	4822	124	42151	100uF	20%	50V
2135	4822	121	43253	360pF	1%	400V	2272	4822	122	31435	470pF	10%	50V
2136	4822	125	60101	10pF VARIABLE			2273	4822	122	31435	470pF	10%	50V
2137	4822	122	10436	6,8pF	10%	50V	2274	4822	126	11308	47pF	5%	500V
2139	4822	122	10166	22nF	30%	16V	2275	4822	126	11308	47pF	5%	500V
2141	4822	122	31385	22pF	5%	50V	2276	4822	124	40178	100uF	20%	10V
2144	4822	124	41554	220uF	20%	10V	2277	4822	124	40178	100uF	20%	10V
2146	4822	122	32096	4,7pF	10%	50V	2278	4822	124	41596	22uF	20%	50V
2150	4822	121	42408	220nF	5%	63V	2279	4822	124	41596	22uF	20%	50V
2151	4822	125	60101	10pF VAR	not 2 Band		2280	4822	122	10183	100pF	5%	50V
2151	4822	125	60102	30pF VAR	only 2 Band		2281	4822	122	10183	100pF	5%	50V
2152	4822	121	43861	56pF	1%	63V	2284	5322	121	42491	47nF	5%	100V
2154	4822	121	42408	220nF	5%	63V	2285	5322	121	42491	47nF	5%	100V
2155	4822	124	41631	1,5uF	20%	50V	2286	4822	126	11311	4,7nF		50V
2158	4822	124	40196	220uF	20%	16V	2287	4822	126	11311	4,7nF		50V
2161	4822	124	40246	4,7uF	20%	63V	2288	4822	126	11311	4,7nF		50V
2163	4822	122	10173	820pF	10%	50V	2289	4822	126	11311	4,7nF		50V
2165	4822	124	40242	1uF	20%	63V	2292	4822	124	40242	1uF	20%	63V
2167	4822	124	41643	100uF	20%	16V	2293	4822	124	40248	10uF	20%	63V
2168	5322	121	50999	470pF	1%	400V	2296	4822	124	40749	3,3uF	20%	63V
2170	4822	124	40239	0,47uF	20%	63V	2303	4822	121	43875	47nF	5%	250V
2172	4822	124	42129	0,22uF	20%	63V	2305	4822	124	41998	2200uF	20%	50V
2173	4822	124	40246	4,7uF	20%	63V	2306	4822	124	41998	2200uF	20%	50V
2176	4822	124	40242	1uF	20%	63V	2307	4822	121	43875	47nF	5%	250V
2177	4822	124	40242	1uF	20%	63V	2309	4822	121	43875	47nF	5%	250V
2180	5322	122	32965	18pF	5%	50V	2310	4822	121	42007	100nF	10%	100V
2181	5322	122	32481	15pF	5%	50V	2311	4822	121	42007	100nF	10%	100V
2182	4822	124	40242	1uF	20%	63V	2312	4822	121	42007	100nF	10%	100V
2198	5322	122	32481	15pF	5%	50V	2313	5322	121	42491	47nF	5%	100V
2204	4822	122	32596	TRIM CAP 5,2pF-30pF			2314	5322	121	42491	47nF	5%	100V
2205	4822	125	60102	30pF VARIABLE			2315	5322	121	42491	47nF	5%	100V
2209	5322	122	32481	15pF	5%	50V	2316	4822	124	42157	680uF	20%	50V
2250	4822	124	40242	1uF	20%	63V	2317	5322	124	21189	100uF	20%	40V
2251	4822	124	40242	1uF	20%	63V	2318	4822	124	41643	100uF	20%	16V
2254	4822	122	10172	220pF	10%	50V	2319	4822	122	10158	1nF	10%	50V
2255	4822	122	10172	220pF	10%	50V	2320	4822	124	41994	3300uF	20%	16V
2256	4822	122	31435	470pF	10%	50V	2321	4822	122	10166	22nF	30%	16V
2257	4822	122	31435	470pF	10%	50V	2322	4822	124	40433	47uF	20%	25V
2258	4822	124	41554	220uF	20%	10V	2323	4822	124	40242	1uF	20%	63V
2259	4822	124	41554	220uF	20%	10V	2324	4822	124	40242	1uF	20%	63V
2260	4822	124	41643	100uF	20%	16V	2326	4822	124	42154	4800uF	20%	80V
2261	4822	124	41643	100uF	20%	16V	2327	4822	124	42154	4800uF	20%	80V
2262	4822	122	10183	100pF	5%	50V	2328	4822	122	10158	1nF	10%	50V
2263	4822	122	10183	100pF	5%	50V	2329	4822	122	10158	1nF	10%	50V

CAPACITORS

2330	4822	124	42125	1000uF	20%	50V	2552	4822	122	10183	100pF 5% 50V
2331	4822	124	40433	47uF	20%	25V	2553	4822	122	10183	100pF 5% 50V
2333	4822	122	10158	1nF	10%	50V	2554	4822	122	10183	100pF 5% 50V
2401	4822	124	41678	22uF	20%	25V	2555	4822	122	10158	1nF 10% 50V
2402	4822	122	10177	10nF	20%	25V	2556	4822	122	10158	1nF 10% 50V
2410	4822	122	10166	22nF	30%	16V	2557	4822	124	40242	1uF 20% 63V
2412	4822	122	10166	22nF	30%	16V	2558	4822	124	40242	1uF 20% 63V
2413	4822	122	31435	470pF	10%	50V	2559	4822	124	40248	10uF 20% 63V
2414	4822	122	31435	470pF	10%	50V	2560	4822	124	40248	10uF 20% 63V
2424	4822	124	21694	1000uF	20%	10V	2561	4822	124	40248	10uF 20% 63V
2425	4822	124	40248	10uF	20%	63V	2562	4822	124	40248	10uF 20% 63V
2426	4822	121	42408	220nF	5%	63V	2563	4822	122	10177	10nF 20% 25V
2427	4822	122	10177	10nF	20%	25V	2564	4822	122	10177	10nF 20% 25V
2428	4822	122	10166	22nF	30%	16V	2565	4822	126	11309	2,7nF 10% 50V
2429	4822	124	40244	2,2uF	20%	63V	2566	4822	126	11309	2,7nF 10% 50V
2430	4822	122	10166	22nF	30%	16V	2567	4822	122	10166	22nF 30% 16V
2431	4822	121	51252	470nF	5%	63V	2568	4822	122	10166	22nF 30% 16V
2434	4822	121	51252	470nF	5%	63V	2569	4822	124	41506	47uF 20% 16V
2435	4822	121	51252	470nF	5%	63V	2570	4822	124	41506	47uF 20% 16V
2441	4822	122	10166	22nF	30%	16V	2571	4822	124	41506	47uF 20% 16V
2451	4822	122	90099	CAP NETWORK 8x100pF			2572	4822	124	41506	47uF 20% 16V
2452	4822	122	10183	100pF	5%	50V	2573	4822	122	10166	22nF 30% 16V
2456	4822	122	31435	470pF	10%	50V	2574	4822	122	10166	22nF 30% 16V
2457	4822	122	31435	470pF	10%	50V	2575	4822	124	40248	10uF 20% 63V
2458	4822	122	31435	470pF	10%	50V	2576	4822	124	40248	10uF 20% 63V
2459	4822	122	31435	470pF	10%	50V	2577	4822	124	40248	10uF 20% 63V
2461	4822	122	10166	22nF	30%	16V	2578	4822	124	40248	10uF 20% 63V
2462	4822	122	31435	470pF	10%	50V	2579	4822	122	10215	27pF 5% 50V
2481	4822	122	10166	22nF	30%	16V	2580	4822	122	10215	27pF 5% 50V
2491	4822	122	31385	22pF	5%	50V	2581	4822	122	10158	1nF 10% 50V
2492	4822	122	31385	22pF	5%	50V	2582	4822	122	10158	1nF 10% 50V
2501	4822	121	43187	27nF	10%	63V	2583	4822	122	10166	22nF 30% 16V
2502	4822	121	43187	27nF	10%	63V	2584	4822	122	10166	22nF 30% 16V
2503	4822	122	10185	1,2nF	10%	50V	2585	4822	124	41506	47uF 20% 16V
2504	4822	122	10185	1,2nF	10%	50V	2586	4822	124	41506	47uF 20% 16V
2505	4822	124	40242	1uF	20%	63V	2587	4822	126	10003	33nF 30% 50V
2506	4822	124	40242	1uF	20%	63V	2589	4822	124	40242	1uF 20% 63V
2507	4822	124	40248	10uF	20%	63V	2590	4822	124	40242	1uF 20% 63V
2508	4822	124	40248	10uF	20%	63V	2591	4822	124	40248	10uF 20% 63V
2509	4822	126	11183	1nF	20%	50V	2592	4822	124	40248	10uF 20% 63V
2510	4822	126	11183	1nF	20%	50V	2593	4822	124	41506	47uF 20% 16V
2511	4822	122	33997	56pF	5%		2594	4822	124	41506	47uF 20% 16V
2512	4822	122	33997	56pF	5%		2595	4822	122	10166	22nF 30% 16V
2515	4822	122	10166	22nF	30%	16V	2596	4822	122	10166	22nF 30% 16V
2516	4822	122	10166	22nF	30%	16V	2597	4822	122	10158	1nF 10% 50V
2517	4822	124	41506	47uF	20%	16V	2598	4822	122	10158	1nF 10% 50V
2518	4822	124	41506	47uF	20%	16V	2599	4822	122	10183	100pF 5% 50V
2519	4822	121	51356	180nF	10%	63V	2600	4822	122	10183	100pF 5% 50V
2520	4822	121	51356	180nF	10%	63V	2601	4822	122	10166	22nF 30% 16V
2521	4822	124	22794	47uF	20%	10V	2602	4822	122	10166	22nF 30% 16V
2551	4822	122	10183	100pF	5%	50V	2603	4822	122	10166	22nF 30% 16V

CAPACITORS

2604	4822	122	10166	22nF	30%	16V	2616	4822	122	10158	1nF	10%	50V
2605	4822	122	10176	4,7nF	10%	50V	2880	4822	124	22263	220uF	20%	25V
2606	4822	122	10176	4,7nF	10%	50V	2881	4822	124	22794	47uF	20%	10V
2607	4822	124	40242	1uF	20%	63V	2882	4822	122	31435	470pF	10%	50V
2608	4822	124	22794	47uF	20%	10V	2883	4822	124	40248	10uF	20%	63V
2610	4822	124	41506	47uF	20%	16V	2884	4822	122	10166	22nF	30%	16V
2611	4822	122	31435	470pF	10%	50V	2885	4822	124	40242	1uF	20%	63V
2612	4822	122	31435	470pF	10%	50V	2886	4822	126	11311	4,7nF		50V
2613	4822	122	10176	4,7nF	10%	50V	2887	4822	122	10183	100pF	5%	50V
2614	4822	126	11183	1nF	20%	50V	2888	4822	122	10183	100pF	5%	50V
2615	4822	126	11183	1nF	20%	50V							

CHIP CAPACITORS

2102	5322	122	32448	10pF	5%	50V	2148	4822	122	31727	470pF	5%	63V
2104	5322	122	32658	22pF	5%	50V	2149	5322	122	33537	1,2pF	5%	63V
2105	5322	122	32531	100pF	5%	50V	2153	5322	122	32654	22nF	10%	63V
2106	4822	122	31727	470pF	5%	63V	2156	4822	122	33339	4,7nF	10%	50V
2107	4822	122	31727	470pF	5%	63V	2157	4822	122	33339	4,7nF	10%	50V
2108	4822	122	31727	470pF	5%	63V	2159	5322	122	32654	22nF	10%	63V
2110	4822	122	32765	820pF	10%	63V	2160	4822	122	31727	470pF	5%	63V
2112	4822	122	31727	470pF	5%	63V	2162	4822	122	31727	470pF	not	/02
2113	4822	122	31727	470pF	5%	63V	2162	4822	122	32142	270pF	only	/02
2114	4822	122	32765	820pF	10%	63V	2164	5322	122	34099	470pF	not	/02
2115	5322	122	32448	10pF	5%	50V	2164	4822	122	33173	560pF	only	/02
2116	5322	122	32658	22pF	5%	50V	2166	5322	122	32654	22nF	10%	63V
2117	5322	122	32661	56pF	not	/02	2169	5322	122	32654	22nF	10%	63V
2117	4822	122	32139	12pF	only	/02	2171	4822	122	31727	470pF	5%	63V
2118	4822	122	32507	6,8pF	not	/02	2174	4822	122	33543	15nF	10%	
2118	4822	122	31971	10pF	only	/02	2175	4822	122	33543	15nF	10%	
2120	5322	122	32654	22nF	10%	63V	2178	4822	122	33173	560pF	10%	63V
2124	4822	122	31727	470pF	5%	63V	2179	5322	122	32654	22nF	10%	63V
2125	5322	122	32966	39pF	not	/02	2183	4822	122	32927	220nF	10%	63V
2125	5322	122	33538	150pF	only	/02	2184	4822	122	31727	470pF	5%	63V
2126	5322	122	32966	39pF	not	/02	2185	4822	122	32765	820pF	10%	63V
2126	5322	122	33538	150pF	only	/02	2186	4822	122	31727	470pF	5%	63V
2127	5322	122	32654	22nF	10%	63V	2187	4822	122	31727	470pF	5%	63V
2128	5322	122	32661	56pF	5%	50V	2188	4822	122	31727	470pF	5%	63V
2129	5322	122	32654	22nF	10%	63V	2192	4822	122	32927	220nF	10%	63V
2132	5322	122	34123	1nF	10%	50V	2193	4822	122	32765	820pF	10%	63V
2133	4822	122	31825	27pF	10%	50V	2195	4822	122	32927	220nF	10%	63V
2138	4822	122	32482	22pF	5%	63V	2196	5322	122	32268	470pF	10%	50V
2140	4822	122	32927	220nF	10%	63V	2197	4822	122	32765	820pF	10%	63V
2142	5322	122	32452	47pF	5%	50V	2199	5322	122	33538	150pF	5%	63V
2143	5322	122	32452	47pF	5%	50V	2200	5322	122	31647	1nF	10%	63V
2145	4822	122	32765	820pF	10%	63V	2201	4822	122	32927	220nF	10%	63V
2147	5322	122	32268	470pF	10%	50V	2210	5322	122	32268	470pF	10%	50V
2148	5322	122	32268	470pF	10%	50V							

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PHILIPS

Art. Code: 51
Sachgebiet: HiFi
Memo: de10stk

SI

Wichtig für die Werkstatt!
Nummer: 51004
Datum: 10.12.96

Service Information

Betrifft: FR310, 320, 330, 340

Verteiler: Sd, F1

Der Microprozessor (Pos. 7471) mit der Bezeichnung TMP47C870N und dem Aufdruck TUNLEU-C3-C ist nicht länger lieferbar. Unter der gleichen Bestellnummer

4822 209 31507

wird jetzt ein OTP mit der Bezeichnung TMP47P870N mit dem Aufdruck "M3 310" geliefert. Der Prozessor befindet sich auf dem Digital Front 2 Board, Service Manual S. 24.

Wird dieser neue Prozessor verwendet müssen zusätzlich 4 pull down Widerstände (10kΩ) eingebaut werden.

1 Widerstand 10kΩ von pin 14 nach Masse
1 Widerstand 10kΩ von pin 15 nach Masse
1 Widerstand 10kΩ von pin 16 nach Masse
1 Widerstand 10kΩ von pin 17 nach Masse

Durch eine etwas höhere Stromaufnahme des neuen µP im ausgeschalteten Zustand kann es vorkommen, daß die BACKUP Batterie schneller entleert wird. Bei leerer Batterie verliert die Uhr ihre Zeit, aber die Senderspeicherung bleibt erhalten.

Form 80048

Nachdruck nicht gestattet! Änderungen vorbehalten.